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ABSTRACT

The purpose of this investigation was to examine the kinds of things males and females do on their first co-operative job, how they perceive their working conditions and responsibilities, and how their performance is viewed by their employers. There were 272 college students in the sample. Sexes were fairly evenly represented, but the male-female ratio differed by curriculum and job placement. Students' workday activities information was collected on a student placement log and supplemented by a student questionnaire. The final instrument was a supervisor's evaluation checklist. A comparison of what males and females do on a typical work day did not reveal many differences. Most students of both sexes viewed each thing they did on the job as an appropriate activity. Supervisors tended to rate females higher than males on general work habits and compliance with company policies. In most cases supervisors tended to attribute similar personal characteristics to male and female students. An interesting comparison is that of students' self-assessment of their abilities in relation to supervisors' ratings. More males than females felt competent in most work activities. In contrast, when supervisors rated performance on many of these same activities, females were usually rated as having done better than males. (CSS)

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SEX DIFFERENCES IN COOPERATIVE EDUCATION: A STUDY OF SEX STEREOTYPING RELATED TO SELECTED INSTITUTIONAL, EMPLOYER, AND COOPERATIVE EDUCATION PROGRAM CHARACTERISTICS

BARBARA R. HELLER
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The members of our Advisory Committee: Dr. Harry N. Heinemann, Dean of Cooperative Education, LaGuardia Community College of the City University of New York; Ms. Janice Firestein, Associate Director, National Commission for Cooperative Education; Dr. Danella Schiffer, Assistant Vice President, Urban Affairs/Human Resources, Citibank; and Dr. James W. Wilson, Director of Research, Northeastern University Center for Cooperative Education. Individually and collectively they neutralized our naivete, alternatively offering advice, support, and criticism as appropriate. They helped smooth our way with introductions; reviewed our instruments and procedures; and read this report with exacting attention. Although we are grateful for their input, we remain responsible for the study processes, conclusions, and interpretations.

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SEX DIFFERENCES IN COOPERATIVE EDUCATION: A STUDY OF SEX STEREOTYPING RELATED TO SELECTED INSTITUTIONAL, EMPLOYER, AND COOPERATIVE EDUCATION PROGRAM CHARACTERISTICS

This report describes a pilot study, conducted in 1977-1978 with a grant from the U.S. Office of Education, Cooperative Education Branch,[1] to investigate sex differences in the cooperative education (co-op) work experience. A total of 272 students from four colleges participated in the study which examined differences in what male and female students do on their first co-op job, what they perceive their work conditions and responsibilities to be, and how their performance is viewed by their employers.

INTRODUCTION

It is readily accepted that persons are affected to various degrees by self and others' expectations of their capabilities. It is also apperent that these expectations, and the resultant behaviors, are based in some measure on sex. That these differential expectations carry over into the sphere of work is indicated by the fact that there are male- and female-dominated occupations although there seem to be no biological bases for this; and the fact that given the same occupation, men and women often advance at different rates and/or perform different activities.

While gross evidence of sex differences in work patterns (e.g., career choice, rates of pay, promotion) have been documented, and anecdotal accounts of male and female experiences on the job support the stereotypical male/female work roles, little data is available describing details of day-to-day behaviors--including the perceptions males and females have about their work performance, and how these are (or are not) reinforced by employers. These kinds of information can provide a basis for understanding career patterns as they vary for men and women.

The general goal of the present inquiry, undertaken by the Center for Advanced Study in Education (CASE), was to begin to collect systematic information about the activities, employer expectations, and self-perceptions of male and female cooperative education students. The pilot research concentrated on cooperative education field work as a referent for study for two reasons: first, cooperative education programs provide educators and employers a medium through which they can respond to the growing concern that work experience be meaningful, appropriate, and successful for the individual man or woman. In other words, findings can be translated into programmatic activities. Second, for a very large proportion of college students co-op represents their initial adult working experience and, as such, its effects on subsequent career choice and satisfaction may be critical. By sampling students involved in their first cooperative education work assignment, the study focused on early adult work experiences--those least likely to be affected by prior, extensive work histories.

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[1] USOE Project #510-AH-70042

Based on questionnaire data from students and ratings from employers, the major questions were:

- Is there a difference between groups of males and females in the perceived nature, frequency, appropriateness, and location of activities they perform during a typical work day?
- Do males and females perceive differences in their ability to perform a variety of job-related functions?
- Do supervisors differentially rate students' ability to perform these functions?
- Are there differences in the personal characteristics attributed to groups of male and female students both by the students themselves and their supervisors?
- And, do the work surroundings--space and equipment--and interpersonal relationships differ for males and females?

As will be explained below (see DESIGN and METHODOLOGY), the scope of the study was modified from what was originally proposed: there was a decrease in the number of colleges that participated, offset by an increase in the number of student participants. The net effect was on the kinds of conclusions possible from the data. For example, the data do not permit analysis by institutional characteristics; thus, we do not compare the work experiences of males and females enrolled in public and private colleges. Similarly, minimal information is presented comparing experiences of groups of men and women students by curricula.

We have a large quantity of data about work-related activities that may differ, depending on whether the worker is a man or woman. Moreover, instruments and procedures for describing the work experience have been developed and tested. Subsequent studies, using these techniques, can be directed to obtaining a carefully matched sample to complement that described herein.

DESIGN AND METHODOLOGY

In this section, we will summarize the process by which potential sites (colleges) were identified, and describe those that agreed to participate. In addition, the procedure for soliciting student respondents from those colleges and universities will be delineated, and the student sample discussed. Finally, the instruments used in the study and their administration will be presented.

A great deal of initial effort was devoted to developing appropriate ways to tap subtle differences in the work experiences of men and women. Two major concerns were: designing instruments that would provide this kind of information and be of benefit to cooperative education practitioners; and employing research strategies that would neither intrude on nor embarrass the college staff, students, or employers that we contacted. We were particularly sensitive to the existing relationships between colleges' co-op departments and employers.

In response to these concerns, we invited four people to serve as advisors to the project. The advisory committee was composed of representatives from industry and leaders in cooperative education administration and research. They provided guidance for the selection of colleges, instrument design, and the interpretation of results.[1]

Site Selection

In its original design, the study was to include a total of eight colleges, two in each of four cells: two-year public, two-year private, four-year public, and four-year private institutions. This proved unrealistic given both the relatively small number of sites (particularly in the two-year private category) that met our criteria for inclusion, and the hesitation of some to become involved in the research. Thus, four colleges were involved: one four-year public, two four-year private, and one two-year public institution.

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[1] Although the authors of this study are grateful for their invaluable suggestions, we accept sole responsibility for all procedures and conclusions.

Potential sites were identified on the basis of the following criteria: a relatively large number of cooperative education students (150 or more per year)[1], geographic accessibility (the Northeast) and a co-op program that had been fully operational for several years.

Twelve colleges meeting these requirements were contacted by mail and telephone. The two four-year private colleges were interested and, following more in-depth meetings with CASE staff, agreed to take part in the study. Of the three eligible two-year public colleges, one agreed to participate. We met with representatives from two four-year public colleges, but only one accepted our invitation. A total of five two-year private colleges were contacted; two were not interested, and although three indicated that they would participate, in two of these instances there were too few students (and in one case too predominantly female) to provide a large enough sample.

Colleges not desiring to participate gave, as explanation, some combination of the following reasons: recent, extensive changes in their program (including such things as new co-op directors and scaled down programs); involvement in other research endeavors, with a resultant lack of time; and a concern that this study, with its intent to contact employers, might inadvertantly jeopardize associations that were difficult to establish.

Description of Participating Colleges

The four colleges that agreed to participate--Northeastern University, Cook College of Rutgers University, The American University, and LaGuardia Community College of the City University of New York--had sufficiently different characteristics and philosophies to represent a range of approaches that exist nationally. Following is a brief description of the colleges and their co-op programs.

Northeastern University (NU) is a four-year, private institution located in Boston. It enrolls approximately 12,000 students. Until the last few years, the majority of students have been commuters. The trend, however, has been changing, and currently, only about half the population commutes. The major undergraduate programs are Physical Education and Health, Business Administration, Criminal Justice, Education, Engineering, Liberal Arts, Nursing, and Allied Health.

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[1] The size criterion was later relaxed in an attempt to increase the pool of two-year private institutions, all of which had much smaller enrollments.

Cooperative education is an integral part of NU's philosophy, having first been instituted at the University 65 year ago. NU's national prominence in co-op is reflected in its Division of Cooperative Education which, in addition to coordinating the program at the institution, has a research center, and a center to provide consulting and training services to other colleges and secondary schools in the country.

All students, with the exception of those in Liberal Arts, are required to enroll in co-op; and it is strongly suggested for Liberal Arts majors. Students do not earn course credit for their co-op work experience, but must satisfactorily complete their work assignment as a requisite for graduation. A student's first work placement is usually for the sophomore year, at which time (s)he begins alternating academic quarters of work and study until graduation. (During any quarter, approximately half the student body is enrolled in classes, while the other half is on work assignments). The combination of alternate quarters and the credit system lead to a five-year baccalaureate program for students in cooperative education.

The Department of Cooperative Education at NU includes approximately 30 full-time coordinators (with faculty status), each with a caseload of 250 to 400 students. The coordinators also have job development responsibilities. The coordinators, or assistants, interview each student at least once a semester to discuss such things as suitable assignments, problems on the job, and/or the student's performance. At the end of a quarter, employers are asked to rate the co-op student using NU's standard evaluation form. This evaluation is generally supplemented by a conversation between the employer and the coordinator.

Approximately 2,500 employers, 70 percent of whom are located within a 30-mile radius of the campus, employ co-op students from NU. A substantial proportion of the employers (more than one quarter) are governmental agencies. All jobs are paid, and most are related to the students' curricular area. Many students are hired by the same employer for two or more quarters. In fact, employers often arrange to retain two students who, by having alternative schedules for school and work, can fill one full-time job for a year.

Cook College of Rutgers University (CCRU) is a four-year unit of the New Jersey State University system. Established as an all-male College of Agriculture and Environmental Science, CCRU five years ago became a multi-purpose, coeducational institution. Still, however, a large proportion of the College's 2,600 students study agriculture and environmental sciences.

In 1977-78, cooperative education was in its fourth year of operation. It is an elective (although strongly recommended for education majors) program, enrolling approximately 200 students in an academic year. Reflecting the college's composition, most students in co-op are enrolled in agricultural sciences programs, and most are placed in jobs related to their field of study. All jobs are paid. Approximately one-half of all placements are with Federal and State governmental agencies, and many co-op students continue with their employers after graduation.

To be eligible for co-op, students must satisfactorily complete the freshman year; no student may start the program later than the spring semester of the junior year. In co-op, a student can earn up to six credits per semester, less credit than if (s)he was taking a full course load that semester. To graduate in four years, therefore, a co-op student must also take courses and/or additional cooperative education assignments for one or two summer sessions.

Faculty supervisors--instructors at the college--volunteer to follow students' progress. No supervisor is assigned more than three students a semester. A learning contract is drawn up by students and their supervisors, summarizing the goals for the work assignment and how their attainment will be assessed.

The American University (AU) is a four-year, private institution in Washington, D.C. Of the total University population of approximately 14,000 students, 4,500 are undergraduates. The student body is predominantly middle class, drawn from a large geographic area.

Cooperative education began as a voluntary program in 1974 and has been growing steadily. In the 1976-1977 academic year, approximately

180 students were enrolled, representing most of the University's academic divisions: the College of Arts and Sciences, the College of Public Affairs, and the School of Business Administration. Approximately 30 percent of all students placed in co-op assignments are graduate students.

To be eligible to take co-op, a student must have completed the freshman year. Co-op earns students elective credit. Each placement can be credited with between 1-1/2 and 2 "course-units" depending on its duration; however, no more than a total of four such course-units can be accumulated through co-op.

Nearly all co-op jobs are paid; some jobs (particularly those taken by graduate students) are part-time. Because the University is located in the nation's capital, it is not surprising that a large proportion (30-50 percent) of all placements are in governmental agencies. Co-op placements are not necessarily related to the student's field of study; the theory is that since co-op is taken for elective credit, the experience should be used to learn about something other than one's major field.

Students are supervised by faculty members, who may have as many as 15 in their caseloads. The student and faculty advisor make up "learning objectives" for the work experience, and decide the methods for evaluating them. Students are encouraged to discuss the learning objectives with their employers. Employers are requested to complete mid-term and final student evaluations.

LaGuardia Community College (LCC) is a two-year institution, part of the City University of New York system. The student body, numbering approximately 5,000, is largely composed of persons residing in the City. Students tend to be from lower or lower-middle class blue collar families, many of ethnic minorities. The College opened in September 1971, offering programs of study that include Liberal Arts, Managerial Studies, Health Services, Secretarial Science, Data Processing, Accounting, Education, Human Services, and Occupational Therapy.

LCC is one of only two public two-year colleges in the nation that requires all full-time day students to take co-op. Nine credits of co-op experience are required for these students and, in certain curricula, required of all students (part-time, evening, and so on). Most students spend their first two or three academic quarters on campus, after which they alternate work intership and study. In the course of the basic two-year program, students take a total of three work internship quarters.

Each freshman has an Advisory-Counseling Team consisting of a faculty member, a cooperative education coordinator, and a student services counselor. There are approximately 25 co-op coordinators with responsibility for following students' progress, and for developing jobs.

More than 300 employers are involved in LCC's program, most of whom are located within the greater metropolitan New York area. An attempt is made to place students in jobs related to their majors, although this is not without exception. Approximately 90 percent of the internships are paid.

Sample Selection

Each college provided a list of names and addresses of all students starting their first work assignment in the Spring of 1978--regardless of year of graduation, type of placement, or major. For CCRU, AU, and LCC, the entire list of students was used. Because of the large number of eligible students at NU, we reduced the list to include all students in curricula with fairly equal numbers of males and females. In those curricula with very unequal distributions (e.g., engineering, which was predominantly male), we listed all students of the under-represented sex (e.g., females), and took a random sampling of other-sex students.

In compliance with the Human Subjects Protection Act[1], we mailed each student on the lists a letter explaining the study's methodology and describing what was expected of participating students. Our letter was accompanied by one from the college's director of cooperative education stating that the study met with their approval. The students were asked to sign an Agreement Form indicating whether or not they would participate, and to return it to CASE in a stamped, self-addressed envelope. This mailing was sent to students from NU on February 14, 1978, and to students from CCRU, AU, and LCC on February 15, February 16, and March 29, respectively.[1] A copy of the form and letters is appended (Appendix A).

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[1] CUNY "Institutional Assurance", #60765XM, approved by DHEW, November 20, 1975.

Table 1 summarizes (by college) the number of students we invited to participate, and their responses. It can be seen that there was a total of 951 students (all colleges combined) in the mailing lists, 306 (32%) of whom agreed to be involved in the study. Only 94 students, approximately 10 percent, wrote back and declined. By far the largest proportion--58 percent or 551 students--did not respond. Of these, at least 17 never received our correspondence. It is probable that many more letters did not reach the intended parties.

TABLE 1

Number of Students Contacted, Agreeing, and Not Agreeing to Participate (By College)

College	Total N Contacted	N Agreeing			N Not Agreeing			N Not Responding[a]		
		M	F	Total	M	F	Total	M	F	Total
NU	648	97	84	181	43	33	76	262	129	391
LCC	175	13	50	63	3	4	7	36	69	105
AU	88	16	17	33	6	3	9	22	24	46
CCRU	40	13	16	29	1	1	2	8	1	9
Totals	951	139	167	306	53	41	94	328	223	551

Note: M = males; F = females.

[a] These numbers include at least 17 students who never received our correspondence: although the Agreement Form was sent to the addresses given to us, these letters were "returned to sender."

The data in Table 1 clearly demonstrates the fact that NU, with the largest co-op program in the country, had twice as many students invited to participate (total N contacted) than the other institutions combined. While it would have been possible for us to randomly limit the number of students chosen to make the representation from each college more equal, this would have severely restricted the size of the total sample.

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[1] Students who had not returned the form by the time the first instrument was to be administered received another copy together with the instrument. No further attempt was made to stimulate participation.

Of those agreeing to participate in the study, it is not surprising that the largest percentage, approximately 59 percent, were from NU[1]; 21 percent of those agreeing were from LCC, and approximately 11 percent and 9 percent of students agreeing were from AU and CCRU, respectively. At three colleges the numbers of males and females agreeing were fairly equal; this was not the case for LCC, where most of the students eligible for participation (65%) and most of those agreeing to participate (79%) were female.

In addition to the 42 students who asked for a copy of our final report, several students agreeing to participate volunteered an explanation of why: one thought the "survey of cooperative education" was a "great idea"; another told us that fellow students had been "attempting to conduct their own investigation into the viability and future improvement" of the college's co-op program. It appeared from these and other comments that many students are eager to see--and to participate in--evaluations of co-op programs.

There was a total of 94 students (all colleges combined) who indicated they could not or would not participate in the study. With the exception of 12 students who simply checked "No", all others provided some explanation. The most frequent reason, offered by 51 (54%) of the non-consenters, had to do with the fact that they were not currently involved in a co-op work assignment: three students resigned or had their co-op job cancelled; 33 said they did not have and never had had a co-op job; and 15 students had transferred to colleges that did not offer co-op. Many of the students who had to decline said that they would like to take part when they had a job.

Thirteen students, approximately 14 percent of those that did not consent, said that between their jobs and classes and arranging transfers to other schools they had no time; again, several apologized, indicating they would have liked to participate. Five students (5%) felt that their jobs were too confidential (i.e., they had access to confidential information or procedures); they could not participate because they would be either violating the organization's rules or, as in two instances, their jobs afforded them insufficient privacy to fill out our forms. As one student (male) put it, "I do manual labor and if my boss saw me taking notes, all hell would break loose."

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[1] This proportion is, in fact, less than would be expected. This is due to somewhat higher proportions of NU students who, compared to those from the other colleges, either did not respond to our consent mailing or said "No." The high non-response rate may be explained by the fact that NU was the only college for which we could not obtain local student addresses. All mailings to the NU sample were sent to permanent home addresses.

The remaining 13 students said "No" for "personal reasons" (3); or because of prior participation in a "similar study" (2). Four students did not approve of research ("It's a waste of time and money"); and four others did not like our procedures--in particular the code numbers we used to insure anonymity, and/or our research objectives.

Instruments and Procedures for Administration

Data collection proceeded in stages; three instruments were used in the study. The first instrument, the Student Placement Log, and the second, the Student Questionnaire, were designed to be completed by each student. The Supervisor's Evaluation was to be filled out by the student's immediate supervisor at work. (Copies of these three instruments are appended; see Appendix B). In addition, to supplement these data, we analyzed supervisors' ratings of co-op students in prior years using records on file at NU.

The instruments will be described in the order in which they were administered.

The Student Placement Log (Log) was designed to provide information detailing the workers' typical day: where, in what, and with whom they were engaged. It consisted of a grid, listing a series of persons, places, and activities down the page and eight hourly time intervals across the top. The items on the Log were chosen to reflect the range of people at different levels of responsibility and function that one could interact with at work, the diversity of locations where one may be, and the variety of tasks one may perform. An effort was made to make the items generic--applicable to workers in all types of jobs--rather than specific to a job title; for example, "working a cash register" was subsumed under "operating machinery/equipment."

The Log (and accompanying directions) were mailed to all students agreeing to participate in the study as well as those that did not respond to the first contact The recipients were given a choice of one of two days, midway into their work placement, as "Log day." NU students could choose March 15 or 16; AU and CCRU March 22 or 23; and April 26 or 27 was suggested for LCC students. If neither day was good, either because a student was not at work or was involved in very atypical activities, (s)he could select the next appropriate day. On Log day, the students were asked to take the Log to work, and for each hour, mark (by checking) all the people they were with, places they went, and activities they performed. (If it was impossible to complete the Log at work, the students were asked to fill it out as soon as possible afterwards.) At the end of the day, they were instructed to circle all checks representing places in which they usually work, people with whom they spoke about work, and activities which they feel are appropriate. Logs were mailed on March 7 (NU), March 31 (CCRU and AU), and April 19, 1978 (LCC). As in all mailings, self-addressed, stamped envelopes were included, and all instruments marked with the student's unique identifying code so that we would know which set of instruments were from (or about) the same student.

The Student Questionnaire (Questionnaire) was designed to provide several types of information: first, a systematic, uniform description of each student's job as (s)he perceived it--the hours, duties, supervision, and working environment; second, students' perceptions of how well they did (or could) perform different activities and conform to work rules; and third, their views on how they were treated by their co-workers and supervisors.

Questionnaires were mailed on March 24 to all NU students who had agreed to participate in the study. On April 17, the instrument was sent to CCRU students; and to students from AU and LCC on April 19 and May 15, 1978, respectively. A second mailing of the Questionnaire went out to students from NU, CCRU and AU from whom we had not heard by May 25, 1978. No second mailing went to LCC's non-respondents, because the effort had not appreciably increased the response rate for the other colleges.

The Supervisor's Evaluation (Evaluation) was a short questionnaire on which each student's immediate supervisor at work indicated what the student did on the job and how well compared to the average worker in the same capacity; what personal qualities the student possessed, and how important each quality was to the job. We designed the Evaluation as a checklist form.

The Evaluation was delivered to the supervisors in one of two ways: either directly from the student who received it together with his/her Questionnaire, or from the college. Supervisors of co-op students from NU, CCRU, and LCC received a packet of materials directly from the student. The packet included explanatory letters from the colleges' cooperative education directors and from CASE; an Evaluation form; and a stamped return envelope. (See Appendix B.)

For AU, a slightly different procedure was used to deliver the same set of materials. In this instance, the packet was included in a mailing that the college was sending as part of their official end-of-year student evaluation. The packet was sent only to supervisors of students who had agreed to participate in the study, and it was inserted by project staff to preserve the anonymity of the subjects.

Table 2, page 14, presents the number of responses to each instrument; a total of 272 different students from all colleges combined (89% of the 306 students who consented to participate) completed one or another of the three forms. This group of 272[1] constitutes the final sample; however, not all instruments were received for all students. Three completed instruments were received for 109 students, while for an additional 90 students we received some combination of two of the three instruments. For 73 other students we obtained a response to one of the three measures.

The highest response rate was to the Log; 251 students, approximately 82 percent of those who agreed to participate, completed the Log. Of these, approximately 65 percent indicated that they were able to do so at work. The remainder reported that they could not--either because they were "too busy", because of the nature of their work (e.g., outdoor labor), or because they "forgot." When asked whether the Log represented a typical day at work, 52 percent rated it as "very typical", 39 percent said it was "somewhat typical", and 8 percent felt it was "not at all typical." (One percent of the respondents did not answer the question.)

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[1] Of the 306 consenters there were 34 students who had responded positively on the Agreement Form but who never participated again. They, of course, are not included in the sample.

TABLE 2

Number and Percentage of Male and Female Consenters
Completing Each Instrument

INSTRUMENTS	Number of Respondents			% of Consenters
	Males[a]	Females	Total N	(N=306)
Student Placement Log	119	132	251	82
Student Questionnaire	98	111	209	68
Supervisor's Evaluation	58	66	124	41
N different students for whom at least one instrument was received	127	145	272	89%

[a] Includes 2 Logs and 2 Supervisor's Evaluations received too late to be included in the analyses.

As can be seen in Table 2, a total of 209 students, or 68 percent of those agreeing to participate, completed the Questionnaire. The response rate was not quite as high as for the Log, probably because the Questionnaire was sent only to students who had consented by the date of that mailing--unlike the situation for the Logs where all 951 students were given a second opportunity to complete the Log and/or Agreement Form. The response rate for the Supervisor's Evaluation, (Table 2) was 41 percent--considerably lower than for either of the two other instruments. This is not surprising given the fact that supervisors are understandably reluctant to be bothered with more paperwork. In fact, one co-op director reported that there was a substantial "no response" rate to the college's own request to supervisors to rate students.

Student reactions to these instruments are interesting. Many put comments in the margins and several supplemented the information we asked for with written descriptions of their jobs--sometimes as long as one page. These were some who found the Log difficult to fill out either because the items did not seem to apply to the nature of their work (12 students), or because the categories or format were too confusing (5). Nine others reported that they found the experience "fun" or "interesting", and approximately half of all Log respondents wanted us to send them copies of their completed Logs. Students also used the Questionnaire to comment. A total of seven students indicated that select questions were ambiguous or confusing, and two felt the instrument was too long. On the other hand, eight students mentioned that they enjoyed participating in the study, and an additional five students said it helped them to evaluate their co-op assignment. One student wrote, "This research project has helped me in gathering my thoughts about my co-op work experience. I hope it has been as useful to you as it has been to me."

To examine supervisors' ratings of co-op students in previous years, we concentrated on one site and limited inspection of records to those dated prior to January 1975. This was done for two reasons: first, although students records were on file at each college they were generally difficult to access. Second, and more crucial, was the fact that starting with 1975 we would need the written consent of each student whose files we wished to examine.

NU agreed to make available supervisors' ratings of students who had their first co-op field placement prior to 1975. Even under those "best of conditions", however, data collection was slow: the records are filed alphabetically by student name, which meant that each folder had to be inspected to determine whether the students had his/her first co-op assignment before 1975; whether there was a supervisor's rating form; and finally, whether the student was in an appropriate curriculum.

A sampling procedure was employed to obtain equal representation of males and females in each major. The final sample of records included 99 males and 99 females from NU's class of 1977, distributed as follows: 17 male and 17 female biology majors; 21 of each sex accounting majors;

17 each majoring in criminal justice; 9 in journalism; 7 in marketing; 5 in economics and political science; 20 females and 18 males majoring in psychology; and 3 females and 5 males majoring in history. The analyses of these records are included with a description of the other findings.

FINDINGS

The results of this study will be presented in several parts. First, we will describe the sample academically--by year and curricula--and by the type of co-op job in which they were placed. This will be followed by sections on sex differences in students' work day activities and surroundings; work conditions; and students' and supervisors' ratings of students' work abilities, personal characteristics, and work habits. In addition, we will examine supervisors' ratings of prior groups of co-op students to supplement our more recent data. Finally, we will look at students' attitudes toward the co-op experience.

Before discussing the study's outcomes, certain decisions that were made concerning their presentation should be made explicit. To begin with, the amount of available data--and the possible analyses--are enormous; we have had to, therefore, select both the data and the types of analyses to include. In doing so, every attempt was made to assure fairness to the reader and to the findings. Thus, we chose data that support stereotypical notions as well as data that suggest stereotypes are not wide-spread. We have, moreover, included data that is interesting per se, those that might direct future investigation, and those that have implications for modifying the practice and preparation of students for co-op field experiences.

The second point is that, in certain instances, the Log and Questionnaire contained similar questions. When the data was similar, one set was presented; when they differed, both sets are included.

Finally, in no instance have we included analyses by college. In all cases, comparisons are based on "all colleges combined" totals. Differences among colleges do exist, but are not included, primarily because the size of the individual college N's do not permit great confidence. The reader should note that, as was explained in Table 1, approximately 59 percent of the students in the study were from one university (NU), and that the sex distribution for LCC's respondents is unequal.

Description of Participating Students

One purpose in describing the student sample is to establish how well-matched the males and females were, since this has important bearing on the interpretation of the data. The second purpose served by examination of the co-op placements is to ascertain differences in the kinds of positions in which males and females are placed, in order to relate any other differences in experiences, expectations, or perceptions. Most of the data is based on responses to the Student Questionnaire, to which there were 209 respondents; there is no reason to suspect, however, that these data cannot be generalized to the total of 272 students who comprised the sample of students for whom we received at least one completed instrument.

Academic Year. The total of 209 respondents were made up of 98 males and 111 females. In terms of academic year, sophomores made up the majority; a fairly equal proportion of male and female sophomores (67% and 61%, respectively) responded to the Questionnaire. This is to be expected since the sample was limited to students' first co-op assignment, which--in three of the four colleges--usually occurs in the second year. The freshman group was comprised of a higher percentage of women (19%) than men (8%), due largely to the facts that most LCC students on their first co-op placement are freshmen; and that many more females than males from this college responded to the survey.

Upper class students were represented. Twenty-one percent of the males in the sample were juniors or middlers[1], as compared to 10 percent of the females. Seniors comprised 2 percent of the males and 7 percent of the females. And, 2 percent and 3 percent of the males and females, respectively, were graduate students.

Curriculum. Data on curriculum are available for 254 students; 209 who responded to the Student Questionnaire, plus an additional 45 students for whom this information was obtained from the lists provided by two colleges. These data are presented in Table 3, page 18.

The table shows, for students for whom the information is available, that the largest proportion of students--more than one-quarter (27.2%) of the total sample--was in a business curriculum. Although the

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[1] The middler year is NU's designation for the year between sophomore and junior; it will be recalled that NU's undergraduate program under the cooperative plan is five years in duration.

TABLE 3

Number and Proportion of Males and Females, by Curricula

CURRICULA	Males		Females		Total	
	N	Percent	N	Percent	N	Percent of Total
Business	35	28.5	34	25.9	69	27.2
Computer Science	5	4.1	4	3.0	9	3.5
Secretarial Science	0	--	8	6.1	8	3.1
Liberal Arts and Sciences	25	20.3	27	20.6	52	20.5
Agricultural Sciences	10	8.1	9	6.9	19	7.5
Criminal Justice	23	18.7	15	11.5	38	15.0
Engineering	13	10.6	6	4.6	19	7.5
Education	7	5.7	10	7.6	17	6.7
Physical & Recreational Therapy	3	2.4	9	6.9	12	4.7
Nursing & Physician's Assistant	0	--	3	2.3	3	1.2
Behavioral Sciences	2	1.6	6	4.6	8	3.1
TOTAL	123	100.0%	131	100.0%	254	100.0%
Curriculum Unknown	4		14		18	

absolute number of students are almost identical, relatively more males than females are in the range of majors classified under"Business": business administration, management, accounting, marketing, finance, personnel and industrial relations, international business, and entrepreneurship, as well as non-specified business majors. Looking at allied fields, computer science majors (data processing; computer operations) accounted for 9 students, 3.5 percent of the sample; and the numbers of males and females are again fairly equal. Eight female students (3.1%) were enrolled in secretarial studies; unfortunately, no males in the sample majored in this area.

There was a total of 52 liberal arts majors, constituting 20.5 percent of the sample of 254 students. Males and females were equally distributed in the subjects subsumed within liberal arts: math, physics, biology, English, journalism, public communications, performing arts, public administration, political science, history, economics, international relations, urban affairs, government, and public affairs.

Thirty-eight students (15%) were criminal justice majors, with somewhat more males (23) than females (15). Consequently, criminal justice comprises 18.7 percent of the male sample, but only 11.5 percent of the female sample. An additional 19 students (10 males and 9 females) were in the Agricultural Sciences--environmental science, horticulture, forestry, natural resource management, animal science, plant science, and wildlife biology. These students account for approximately 7.5 percent of the total sample.

The 19 engineering students, constituting 7.5 percent of the sample, included 13 males and 6 females. Although females were a slight majority of the education majors (7 males, 10 females), they predominated in the health and/or "helping" curricula--physical and recreational therapy, nursing, physician's assistant, and behavioral sciences (including anthropology, sociology, psychology, and human services). In these areas combined, there were 5 males (4% of the total male sample) and 18 females (13.8% of all females).

In summary, in most curricula there are generally equivalent proportions of males and females. Males predominate in criminal justice and engineering; females outnumber males in secretarial science, and in the health and helping professions. The distribution of sex by curricula is not surprising; it conforms to what we know about the areas that are usually dominated by one sex or the other. Given the limitations of our sampling procedure, it is to be expected that our sample would reflect existing inequalities.

Because of the relatively small number of sample students in each discrete major, several were combined for subsequent analyses. In the remainder of this report, comparisons by curriculum group students into four general areas: Business (including students majoring in business, computer science, and secretarial science); Liberal Arts (combining liberal arts and sciences, agricultural sciences, and criminal justice); Engineering; and Health (combining education, physical and recreational therapy, nursing and physician's assistant, and the behavioral sciences). This procedure did not overcome unequal distributions of males and females, particularly in the areas of Business and Health; thus, comparisons by curriculum are merely suggestive. Future studies should attempt to obtain samples in which males and females are evenly represented in all curricula.

Co-op Placement. Table 4 summarizes the types of businesses and agencies to which co-op students were assigned. Of the 209 students

TABLE 4

Proportion of Males and Females, by Type of Work Place[a]

(All Figures in Percentages)

WORK PLACE	Males (N=98)	Females (N=111)	Total (N=209)
Federal or State Agency	16	19	18
Hospital	9	9	9
Office or Business (unspecified)	7	6	7
Newspaper or Publisher	5	7	6
Laboratory	9	5	6
Rehabilitation center, Nursing home, Institution	2	8	6
School	6	4	5
Bank	3	5	4
Research organization	4	5	4
Law firm	3	5	4
Engineering firm	5	2	4
Accounting firm	3	4	3
Computer firm/facility	4	2	3
Manufacturing company	5	--	2
Retail store	3	1	2
Park	3	1	2
Oil company	2	1	1
Insurance company	2	1	1
Police department	--	2	1
Sugar refinery	2	--	1
Library	1	1	1
Miscellaneous[b]	6	7	7
NR (No Response)	--	5	3
TOTAL	100%	100%	100%

[a] Based on responses to the Questionnaire.

[b] This includes types of sites which only one student reported; 6 males and 8 females were employed at a union's headquarters, a railroad, public utility, and so on.

responding to the Questionnaire, 18 percent reported working for Federal or State agencies.[1] The variety of places where co-op students work is large, with no more than 9 percent of the students working in a given type of organization.

It appears that equal proportions of students of both sexes worked in most of the businesses or companies listed in Table 4. The largest difference, one that accords with the distribution of sex by curriculum, occurs in the number of students working in rehabilitation centers, nursing homes, or other health-related institutions--8 percent of the females were assigned to these places, as compared to 2 percent of the males. (Another difference was that 6 females did not describe their place of work (NR), whereas all males did so.)

An examination of students' places of work does not give a very clear indication of what their job responsibilities are. For example, nursing students and business majors may both be employed in hospitals; however, the nursing students tend to work as aides dealing with patients while the business majors might work in the accounting office. Similarly, job titles--which tend to be in line with students' curricula--do not, in and of themselves, necessarily describe what males and females do at work.

Workdays

In this section of the report, we will compare typical work days of male and female co-op students, describing where they may be found during a day (Table 5), the people with whom they interact (Table 6), and the activities they perform (Table 7). In addition, we will summarize students' perceptions of what they do in terms of how usual or appropriate it is for persons in their capacity or at their level. Most data presented is based on responses to the Log, supplemented by selected items from the Questionnaire.

In all subsequent calculations of male-female difference presented in this report, computations for females are always subtracted from the male figures. Thus, positive differences (+) indicate a difference in favor of males, while a negative quantity (-) favors females.

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[1] According to the responses on the Supervisor's Evaluation, approximately 30 percent reported students' work site as a Federal or State agency. The discrepancy may be due to a disproportionate number of supervisors from these agencies, or possibly that students do not know whether or not a hospital, for example, is federally or state run.

Locations. Table 5, page 23, summarizes the data describing where students report being during their work day. The information in the table (Parts I, II, and III) was obtained from an analysis of responses to the Log. (This instrument directed respondents to mark, for each hour, all their activities, their locations, and the people with whom they came into contact. With regard to where they were--their location--they were asked to circle items representing places where they usually worked.)

Part I (Table 5) presents the percentage of males (M) and females (F) who indicated that they were at a place at least once during the day. Differences in male/female proportions and the significance of these differences are included.[1]

Part II (Table 5) is the "Average Frequency" with which males and females were at each location. This frequency was calculated for each location item by dividing the total number of hours the location was noted by the number of students who reported being there. For example, if a total of two males stated that they were "outside", one during three different hour periods and the other during five, the Average Frequency for males would be four ($\frac{3+5}{2}$). Thus, the meaning of the Average Frequency is, in question form, for those students who were in each location, how often during a day, on the average, were they there?[2] Male-female difference scores, and the significance of the mean difference (t-tests) is reported.

Part III of Table 5 is the proportion of students of each sex who indicated a place in which they were during the day as one in which they usually work. Also included is the difference between males and females, and the χ^2 level of significance.

Part IV of the table presents the results of a question, asking students to indicate for each of a series of locations, whether they were there "almost all", "most", "some", or "none" of their time.[3]

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[1] In these and all subsequent χ^2 tests reported, the Yates correction was applied in cases where the estimated frequencies were less than or equal to 10.

[2] The Average Frequency score ranges from 1 to 8. To be included in the calculation, a student would have to have made at least one check for activity, and a maximum of 8 for the 8 hour periods on the Log.

[3] See Appendix B, Student Questionnaire, question 10.

TABLE 5

A Comparison of Where Male and Female Students were Located During Work Days

LOCATION	I Percentage in each Location (Log)			II Average Frequency[b] (Log)			III Percentage Usually in Location (Log)			IV Relative Frequency (Questionnaire)[c]		
	Male	Female	Difference (M-F)[a]	Male	Female	Difference (M-F)[a]	Male	Female	Difference (M-F)[a]	Male	Female	Difference (M-F)[a]
Cafeteria, Lunchroom	61	58	+ 3	1.6	1.5	+0.1	21	17	+ 4	1.7	1.7	-0
General Office/Secretarial Area	54	61	- 7	4.6	5.1	-0.5	36	46	-10	2.0	2.4	-0.4*
Outdoors	47	36	+11 Δ	3.3	1.9	+1.4**	23	7	+16**	1.7	1.4	+0.3**
Lounge/Restroom	42	44	- 2	2.0	1.9	+0.1	7	6	+ 1	▨	▨	▨
Private Office	39	33	+ 6	4.1	4.1	-0	24	18	+ 6	1.9	1.9	+0
Travel	28	22	+ 6	2.8	1.9	+0.9*	14	6	+ 8*	1.7	1.4	+0.3**
Duplicating Room	27	26	+ 1	2.0	1.6	+0.4 Δ	11	11	+ 0	1.6	1.6	+0
Computer/Keypunch Room	25	11	+14**	3.5	3.5	-0	16	7	+ 9*	1.5	1.3	+0.2*
Specified - Other	25	34	- 9 Δ	4.9	4.4	+0.5	17	20	- 3	▨	▨	▨
Stockroom	23	11	+12*	2.7	2.5	+0.2	13	5	+ 8 Δ	1.3	1.3	+0
Reception Area	19	24	- 5	3.7	3.4	+0.3	8	13	- 5	1.4	1.6	-0.2 Δ
Library	14	8	+ 6	2.2	2.5	-0.3	8	3	+ 5	1.3	1.4	-0.1
Mailroom	14	17	- 3	2.2	2.0	+0.2	6	10	- 4	1.2	1.2	+0
Laboratory	14	11	+ 3	4.4	4.1	+0.3	10	7	+ 3	1.4	1.2	+0.2
Classroom	8	12	- 4	2.3	3.8	-1.5 Δ	5	6	- 1	1.2	1.3	-0.1 Δ
Selling Floor	7	4	+ 3	4.2	3.3	+0.9	4	3	+ 1	1.2	1.0	+0.2*
Kitchen	5	6	- 1	2.2	1.6	+0.6	2	0	+ 2	1.1	1.1	-0
Assembly Line	4	2	+ 2	2.2	3.0	-0.8	3	1	+ 2	1.1	1.0	+0.1*
Post Office, Bank, UPS	4	0	+ 4*	1.4	0.0	+1.4	1	0	+ 1	▨	▨	▨
Conference, Meeting Room	3	2	+ 1	1.0	3.0	-2.0 Δ	0	1	- 1	▨	▨	▨
Patient's Hospital Room	3	11	- 8*	4.7	4.7	-0	1	8	- 7*	1.1	1.3	-0.2*
Greenhouse	3	2	+ 1	4.3	3.0	+1.3	3	2	+ 1	1.0	1.0	+0
Own Office, Room, Desk Area	3	2	+ 1	6.7	3.0	+3.7 Δ	3	1	+ 2	▨	▨	▨
Supervisor's Office	2	2	+ 0	1.5	4.0	-2.5	1	1	+ 0	▨	▨	▨

[a] ** = significant at .01; * = significant at .05; Δ = significant at .10 level.

[b] Average frequency score is the total number of times a location was noted, divided by the total number of respondents who indicated they were there at least once. The higher the score, the more frequently students were at the location.

[c] Relative frequency score is a weighted average based on the number of respondents to Question 10, Questionnaire. Scores range from 1 to 4. A higher score is an indication that more time was spent at that location.

Note: A +0 results from rounding; the sign indicates the direction of the difference between males and females.

A "relative frequency" score was derived weighting the responses (1 = "none" to 4 = "almost all" of my time) and dividing the total weighted score by the number of subjects who completed the item. The possible range is from 1 to 4, and the higher the score the more often (on the average) students reported being in that location.[1]

There is some indication that males report being in more different locations during the course of one day than do females, and more males are in more locations. At least three males were in each place--and as many as 61 percent in one. Females, on the other hand, were never in the bank or post office, and far fewer reported being at several other sites. Looking at Part I, it can be seen that of the 24 locations, a larger proportion of males reported being in 17--or three-quarters of these. For 16 of the 24 items, more males indicated that being in that location was usual (Part III, i.e., appropriate). The Questionnaire results (Part IV of the table) similarly show that males tend to be in more places relatively more frequently than females: they had higher frequency scores on 11, approximately two-thirds, of the 18 itemized locations.

Despite these differences the fact that males report being in more places more often than females may be due, in part, to the fact that the location items included most locations males found themselves in, but not all places applicable to females. As an example, fewer males than females (25%; 34%)[2] used the category "specified other"; although the difference did not reach, it approached significance. This category was created by us to include several different places students added to the Log that could not be classified more generically, such as: drafting room, video room, hallway, teller's window, nursing station, physical therapy department, mat room, activities room, and patrol car.

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[1] The list of items on the Log and Questionnaire did not match; 18 of the 24 Log items were repeated in the Questionnaire. (Actually, 19 items appeared on the Log, but five additional location categories--own office, desk, area; conference, meeting room; post office, bank, UPS; supervisor's office; and "specified other"--were developed from the students' responses.)

[2] Where scores are reported for both sexes, that for males is always presented first.

The male-female differences for specific locations conform quite well to traditional expectations. Looking first at the Log (Part I), a greater proportion of female respondents reported being in patients' hospital rooms, general office/secretarial area, classroom, and kitchen. Similarly, on the Questionnaire (Part IV) females reported spending more time in these locations than males. (For patients' hospital room and general office/secretarial area, the sex difference was significant at the .05 level of confidence.) These outcomes may not be entirely a function of differential treatment but probably reflect the fact that more female participants had jobs as nursing aides/assistants, or in secretarial capacities and worked in sites where these locations are more common.

Although there was no significant difference (Part I) in the proportion of males and females who indicated that they were "outdoors" or "travelling" on a typical day, these differences were significant in retrospect--males reported spending more time outdoors and travelling (Part IV). Moreover, males were doing so significantly more often during the day (Part II); they indicated that spending time outdoors/travelling was usual (Part III, $p = .05$). The data also indicates that a significantly larger proportion of males were in the computer room and stockroom; and, although the differences were smaller, more males were also in the post office, duplicating room, laboratory, greenhouse, conference room, and assembly line (Part I). These differences are supported by the Questionnaire data in instances where there were comparable items.

On its face, the evidence suggests that males work in many different types of areas--ranging from stockrooms to private offices--and do more travelling and outdoor work. Females, on the other hand, work in fewer areas, those generally related to the helping function (i.e., classrooms or hospital rooms), and in general secretarial locations. These conclusions, however, should be viewed in relation to the facts that more females spent time in locations that we did not classify, and the job titles of the males and females in the sample differed enough to have contributed to the results.

Persons with Whom Students Interacted. Table 6, page 27, presents data about whom--the people--students associated with during their work day. Similar in format to Table 5, Table 6 summarizes students' responses on the Log. Part I is the proportion of males and females who indicated they were with the people listed on the Log at least once during the day. The Average Frequency of their interactions (Part II) is calculated in the same manner as for the location responses in Table 5, and its meaning is that, the higher the number the more times there was an interaction. Part III of Table 6 reports the proportion, for each sex respondents, of interactions that had to do with work. Included are male-female differences, and the statistical significance of the statistical tests: χ^2's for proportions; t-tests for frequencies.

Looking at the proportion of males and females who indicated being with the people listed (Part I of Table 6), a trend similar to that noted for where they were is evident: more males reported being with many more different kinds of persons. A greater proportion of males than females interacted with 12 of the 16 persons itemized (I).[1] Analagous to the situation for the locations, females tended to write in more types of persons that we could not classify except as "specified professionals"; however, the number of such responses was too small to have affected the overall results.

Inspection of Table 6 reveals that there were not many substantial differences between males and females in terms of the people they saw during the day, nor in how often they were with them. One difference is in the category "clients, customers, patients": although there was no difference in the proportion of males and females who reported being with these type persons (Part I), there was a statistically significant difference in favor of female interactions; that is, female co-op students met with these types of people more often during a typical day at work (Part II). Moreover, a larger proportion of females spoke to individuals in this category about work-related matters (III, Table 6). These differences may reflect the fact that more females in the sample worked as nursing or therapy aides, thus coming into frequent contact with patients/clients.

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[1] Nine categories of people were provided on the Log; from students' written in responses we developed 7 additional categories: "own friends and family", "visitors", "specified professionals", "secretaries", "delivery men", "security people", and "paraprofessionals/technicians."

TABLE 6

A Comparison of People With Whom Male and Female Students Interacted During Work Days

PEOPLE	I Percentage With Each Person (Log)			II Average Frequency (Log)			III Percentage Interacting About Work (Log)		
	Male	Female	Difference[a] (M-F)	Male	Female	Difference[a] (M-F)	Male	Female	Difference[a] (M-F)
Co-Workers in Department	93	91	+ 2	5.8	6.2	-0.4	80	64	+16**
Direct Supervisor	75	85	-10 ▲	3.8	4.2	-0.4	62	68	- 6
People From Other Departments	70	69	+ 1	4.3	4.2	+0.1	43	36	+ 7
Supervisors Other Than Your Direct Supervisor	54	50	+ 4	3.4	2.8	+0.6	37	34	+ 3
No One	37	33	+ 4	3.2	2.9	+0.3	10	7	+ 3
Clients/Customers/Patients	35	43	- 8 ▲	4.0	5.3	-1.3**	22	35	-13*
People You Supervise	15	13	+ 2	4.8	4.3	+0.5	10	4	+ 6
Repair People	14	11	+ 3	2.4	2.9	-0.5	4	4	- 0
Salespeople	11	8	+ 3	3.8	1.1	+2.7**	8	2	+ 6▲
Security People	3	1	+ 2	1.7	2.0	-0.3	1	1	+ 0
Specified Professionals	3	4	- 1	3.3	1.4	+1.9	1	2	- 1
Visitors	3	2	+ 1	7.0	2.3	+4.7*	3	2	+ 1
Delivery/Mail Personnel	2	2	+ 0	3.0	2.5	+0.5	2	1	+ 1
Secretaries	2	1	+ 1	5.5	2.0	+3.5	1	0	+ 1
Own Friends/Family	1	4	- 3	2.0	1.7	+0.3	0	2	- 2
Paraprofessionals or Technicians	1	0	+ 1	1.0	0.0	+1.0	1	0	+ 1

[a] ** = significant at .01; * = significant at .05; ▲ = significant at .10 level.

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

A somewhat greater proportion of females also reported being with their supervisor, own friends and family, and specified professionals (the latter including such persons as township officials, attorneys, and teachers) but gave no indication of their working relationship with them.

The only statistical difference favoring males was that more males spoke to co-workers in their departments about work (Part III). Since there was little difference in the proportion of males and females interacting with co-workers for any reason, the significant finding suggests that females did more socializing with co-workers--an hypothesis that is contradicted by results to be presented subsequently.

Regardless of the magnitude of the differences, however, more male than female students report being with a variety of persons--from delivery people and repair people to supervisors other than their immediate supervisors. In view of the fact that males tend to be in more places than females, it is not surprising that they also come into contact with a greater diversity of people during their work day.

Work Activities. Table 7, pages 30-31, summarizes data relating to the activities that males and females engage in at work. Although the format of the table appears identical to that of Table 5, the meaning differs. We will deal here with the information presented in the first three parts of the table. Part IV, which concerns students' perceptions about the appropriateness of the activities they perform, will be discussed in the following section of the text.

Parts I and II of Table 7 present the proportion of males and females who indicated that they performed each of a series of activities listed on the Log, and the Average Frequency with which they did so. These figures were calculated in the same manner as those in Tables 5 and 6, and can be interpreted similarly: thus, Part I reflects the difference in proportions of males and females who indicate that, at least once on a typical day at work, they engage in a specified activity. The χ^2 test was used to determine the significance of differences. The data in Part II describes the average frequency with which males and females engaged in an activity during a day;

the range is from 1 to 8, and the calculation of the average was based only on those students who did the activity at least once. Significance was determined by t-tests.

Part III of Table 7 contains students' responses to a question on the Questionnaire[1] in which they were presented with a list of activities and were asked to indicate whether they engaged in an activity "almost every day", "occasionally", or "never." The responses were weighted; "never" as a "1"; "occasionally" as a "2"; and "almost every day" as a "3". The "Relative Frequency", a mean, was obtained by dividing the sum by the number of respondents.[2] Thus, the scores in Part III, Table 7 range from 1 to 3; the higher the score the more often (on the average) the activity was performed.

Before proceeding to look at the data describing what males and females do at work, note that not all activities on the Log were listed on the Questionnaire, and vice versa. There were a total of 37 activity items on the Log, plus 8 additional items which reflected students' written in "other" responses.[3] The Questionnaire listed 43 activities, of which 33 match the Log.

The data in Part I indicate the activities in which the largest proportions of both males and females engaged. These can be considered the most common activities, and include: taking a meal break (80%; 83%)[4]; receiving instructions (56%; 62%); on a rest break/socializing (53%; 46%); collecting or sorting data/things (47%; 52%); answering phones/taking messages (35%; 52%); and filing, copying numbers, checking (35%; 42%). In addition, "dealing with clients, customers, students", was done by a relatively large proportion of both sex

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[1] Student Questionnaire, question 12. See Appendix B.

[2] The non-respondents to a given activity were not included in the calculations for that activity. The number of non-respondents ranged from 0 to 13 for females and 0 to 9 for males.

[3] The activities which were written in were: filling out forms; stamping, stapling, pasting; packaging, shipping, distributing mail; xeroxing, duplicating; supervising clients (students, children, or patients); preparing data for analysis; technical activities; and security activities. Another category--"traveling" was not included, since it is an item in the "where" section of the Log, summarized in Table 6.

[4] Figures for male respondents are follwed by those for female respondents.

TABLE 7

A Comparison of What Males and Females Do on Typical Work Days

ACTIVITIES	I Percentage Performing the Activity (Log)			II Average Frequency (Log)			III Relative Frequency Score (Questionnaire)			IV Percentage Indicating Activity as Appropriate		
	Male	Female	Dif. (M-F)[a]	Male	Female	Dif. (M-F)[a]	Male	Female	Dif. (M-F)[a]	Male	Female	Dif. (M-F)[a]
On a Meal Break	80	83	- 3	1.1	1.2	-0.1	▨	▨	▨	48	38	+10
Receiving Instructions	56	62	- 6	3.1	2.2	+0.9*	2.6	2.6	+0	67	68	- 1
Rest Break, Socializing	53	46	+ 7	1.7	1.5	+0.2	▨	▨	▨	45	36	+ 9
Collecting, Sorting Data/Things	47	52	- 5	3.3	3.2	+0.1	2.1	2.1	-0	85	75	+10
Answering Phones, Taking Messages	35	52	-17**	3.8	3.7	+0.1	2.1	2.2	-0.1	68	56	+12
Filing, Copying, Checking	35	42	- 7	3.4	3.0	+0.4	2.0	2.2	-0.2	63	71	- 8
Errand for Work	34	34	+ 0	2.2	1.8	+0.4	2.0	1.8	+0.2*	50	51	+ 1
Operating Equipment	34	33	+ 1	4.0	3.0	+1.0*	2.1	2.0	+0.1	75	70	+ 5
Making Phone Calls for Work	32	33	- 1	3.2	2.2	+1.0*	1.9	1.8	+0.1	82	70	+12
Writing Work Reports, Letters	32	31	+ 1	3.6	2.5	+1.1*	1.9	1.8	+0.1	95	73	+22*
Dealing with Clients/Customers/ Students/Patients	32	46	-14*	4.0	5.3	-1.3**	2.2	2.2	+0	74	82	- 8
Analyzing Data	31	21	+10Δ	3.6	3.2	+0.4	1.9	1.8	+0.1	83	86	- 3
Lifting/Carrying Packages, Equipment	29	14	+15**	2.8	2.2	+0.6	2.7	2.4	+0.3**	56	44	+12
Reading for Work	27	30	- 3	2.3	2.5	-0.2	1.9	1.8	+0.1	75	72	+ 3
Using Phone for Personal Business	26	26	0	1.4	1.3	+0.1	1.8	1.8	+0	16	11	+ 5
Having Work Reviewed/Corrected	26	32	- 6	2.4	1.7	+0.7	2.3	2.2	+0.1	67	64	+ 3
Taking Notes	24	21	+ 3	2.4	2.3	+0.1	1.7	1.7	+0	54	54	0
Reading Personal Material	24	23	+ 1	2.4	1.5	+0.9*	1.7	1.5	+0.2	25	13	+12
Tabulating Data	22	24	- 2	3.8	3.3	+0.5	1.9	1.8	+0.1	81	77	+ 4
Giving Instructions to Others	22	19	+ 3	3.1	2.1	+1.0Δ	1.7	1.4	+0.3**	69	68	+ 1
Developing Ideas	19	20	- 1	3.0	2.1	+0.9	1.9	1.8	+0.1	82	74	+ 8
Personal Errand	17	11	+ 6	1.4	1.2	+0.2	1.6	1.5	+0.1	25	33	- 8
Shelving Supplies	15	10	+ 5	2.2	2.0	+0.2	1.4	1.5	-0.1	56	46	+10
Waiting for Instructions/Machine Time	14	14	- 0	2.4	1.4	+1.0Δ	2.0	2.0	-0	25	37	-12
Instructing/Tutoring Clients	12	17	- 5	2.9	4.5	-1.6Δ	1.5	1.4	+0.1	57	73	-16
Attending Meetings	12	13	- 1	1.6	1.5	+0.1	1.6	1.6	+0	64	47	+17
Repairing or Cleaning Equipment/ Animals	11	14	- 3	3.3	2.0	+1.3Δ	▨	▨	▨	85	58	+27
Operating Computer	11	7	+ 4	3.8	5.1	-1.3	1.4	1.3	+0.1	69	78	- 9
Proofreading/Keypunching	11	20	- 9Δ	2.6	2.5	+0.1	▨	▨	▨	54	77	-23

Getting Lunch/Coffee for Co-Workers	10	10	+ 0	1.2	1.4	-0.2	1.5	1.4	+0.1	33	38	- 5
Typing for Work	7	27	-20**	3.1	3.4	-0.3	1.3	1.7	-0.4**	88	67	+21
Personal Writing	7	4	+ 3	2.1	1.2	+0.9	1.3	1.3	+0	25	33	- 8
Restocking (Feeding) Equipment (Animals)	6	6	- 0	2.6	2.1	+0.5	1.2	1.3	-0.1	71	100	-29
Getting Lunch/Coffee for Supervisors	6	6	- 0	1.4	1.2	+0.2	1.3	1.3	+0	57	38	+19
Security, Guarding	6	2	+ 4	5.1	3.7	+1.4				57	67	-10
Technical, Middle-Level Activities	6	8	- 2	4.3	2.8	+1.5				86	90	- 4
Reordering Supplies	4	12	- 8*	1.4	1.6	-0.2	1.2	1.2	-0	80	69	+11
Designing Instruments, Techniques	4	2	+ 2	3.8	7.0	-3.2Δ	1.2	1.1	+0.1*	100	100	0
Packing, Mailing, Shipping, Distributing Mail	3	4	- 1	2.8	3.1	-0.3	▨	▨	▨	100	67	+33
Preparation of Data for Analysis	3	3	- 0	2.7	4.8	-2.1	▨	▨	▨	100	75	+25
Typing Personal Material	2	5	- 3	2.5	1.8	+0.7	1.2	1.2	-0	50	43	+ 7
Filling Forms	2	3	- 1	4.5	2.5	+2.0	▨	▨	▨	100	75	+25
Stamping, Stapling, Pasting	1	3	- 2	3.0	2.5	+0.5	▨	▨	▨	0	0	0
Supervising Clients	1	4	- 3	3.0	3.2	-0.2	▨	▨	▨	100	33	+67
Xeroxing, Duplicating	1	4	- 3	2.0	2.7	-0.7	▨	▨	▨	0	50	-50
Working with Others	▨	▨	▨	▨	▨	▨	2.7	2.6	+0.1	▨	▨	▨
Exposure to Hazardous Conditions	▨	▨	▨	▨	▨	▨	1.3	1.2	+0.1	▨	▨	▨
Making Decisions	▨	▨	▨	▨	▨	▨	2.3	2.1	+0.2	▨	▨	▨
Exposure to Extreme Temperatures	▨	▨	▨	▨	▨	▨	1.4	1.1	+0.3**	▨	▨	▨
Proofreading	▨	▨	▨	▨	▨	▨	1.6	1.8	-0.2*	▨	▨	▨
Socializing with Supervisors at Work	▨	▨	▨	▨	▨	▨	2.4	2.4	+0	▨	▨	▨
Cleaning Equipment/Animals	▨	▨	▨	▨	▨	▨	1.4	1.4	0	▨	▨	▨
Repairing Equipment/Machines	▨	▨	▨	▨	▨	▨	1.2	1.1	+0.1	▨	▨	▨
Socializing with Co-Workers at Work	▨	▨	▨	▨	▨	▨	2.6	2.6	+0	▨	▨	▨
Keypunching	▨	▨	▨	▨	▨	▨	1.2	1.1	+0.1*	▨	▨	▨

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

[a] ** = significant at .01; * = significnat at .05; Δ = significant at .10 level.

respondents (32%; 46%). For those items that also appeared on the Questionnaire, the Relative Frequency Scores (Part III, Table 7) ranged between "occasionally" and "almost every day."

The activities that a substantial proportion of people performed tell us little more than that the jobs held by most of our sample students included a number of low-level tasks, and afforded opportunities for rest and meal breaks. These outcomes are hardly noteworthy, since they reflect most work situations, and particularly most entry-level positions--a situation which describes the assignments of co-op students on a first-time job.

Considering differences in the activities performed by males and females, an examination of Table 7 reveals that, overall, there were no large differences in the proportions (Part I) or frequencies (Parts II and III) with which males and females engaged in an activity. There were, however, some exceptions. Significantly more males than females reported lifting/carrying packages or equipment. Moreover, males did so more frequently than females (Part III), even though both groups' scores on this item were high. Although there was no significant difference in the proportion of males and females who performed the following activities (I), males reported doing so more often: going on an errand for work, giving instructions to other workers, and designing instruments/techniques (III). Males also reported that they were more frequently keypunching and exposed to extreme temperatures.[1]

There were four additional activities males did more often during a day than did females--operating equipment; making phone calls for work; writing work reports, letters; and reading personal material (Part II)--although there were only slight differences in proportion or in Relative Frequency. This means that of those males and females who performed these things, males did so more times a day.

Interestingly, these differences support the stereotypical notions of what males and females do at work: men tend to do physical things; females perform clerical functions, or are involved in a "helping" capacity. Although most of the activities where there were statistically significant differences were fairly routine tasks, there is some indication that more males are more frequently performing more of the higher-level functions, such as designing instruments or techniques (See particularly Part III, Table 7). The findings are somewhat equivocal. Although the differences are small, proportionally more males report (I) analyzing data and giving instructions to other workers; furthermore, more females report receiving instruction (there was no sex difference in the Relative Frequency score). While slightly more of the females indicated that they were "developing ideas" (I), the difference in Relative Frequency (III) favors the males.

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[1] These items did not appear on the Log; the Log combined "keypunching" and "proofreading", whereas they were separated on the Questionnaire. Since females "proofread" more often, it is likely that if the items had been divided on the Log, the results would have been consistent.

Some of the smaller differences, or lack of differences, refute usual stereotypes. Looking at activities that are traditionally "male" in character, approximately equal proportions of males and females said they operate equipment (I), and they report doing so "occasionally" (III). On a daily basis, however, males operated equipment more often (II). Of course, there may have been some differences in the kind of equipment they were referring to, since there were differences in job titles which are not considered in these analyses. Again, in contrast to the stereotype, more females report repairing or cleaning equipment/animals (I); males, however, report doing these things relatively more frequently (III). And, as a further illustration, a somewhat greater proportion of males reported that they were taking notes, and getting lunch or coffee for co-workers (I)--tasks usually typed as "female."

Turning to an examination of activities that are of a more personal and less work-related nature, approximately 7 percent more males indicated that they took at least one rest break during the day; 6 percent more reported doing a personal errand; approximately 3 percent more males than females engaged in personal writing; and 1 percent more in reading personal material (Table 7, Part I). With respect to this last activity, while the difference in proportion is very small, males report that they read personal material more frequently (II). Approximately 3 percent more females, however, report typing personal material (not surprising given the substantially larger proportion of females who report typing for work), although there is no difference in how frequently it is done.

Log and Questionnaire data show that more males tend to engage in these activities, and they do so more often than females. They also tend to more frequently engage in socializing with supervisors at work and socializing with co-workers at work. Although none of these differences are statistically significant, taken as a whole it would appear that males spend more time at work doing things they describe as personal and social. These findings contradict data reported previously, when more males indicated that they interacted with co-workers about work-related matters. These data suggest that males and females may define "socializing" differently, or that social interactions at work are a function of other factors--such as job title, amount and kind of work space, and sex of co-workers--not delineated in this study.

Appropriateness of Activities. The instructions for completing the Log directed students to indicate for each activity they performed, whether they felt it was one that a person with their job should do. Part IV of Table 7 summarizes the responses to the questions: for those students who performed an activity, what proportion of males and females thought it was something a person in their job should engage in--i.e., was it an appropriate activity?

Most activities were viewed as appropriate by more than half the males and females performing them. Of the few activities they tended to find inappropriate, many were personal in nature, such as taking meal or rest breaks, making personal phone calls, going on personal errands, or getting lunch/coffee for co-workers. Also, relatively few students of either sex thought that "waiting for instructions/machine time" was appropriate. Interestingly, less than half the females (but more than half the males) thought that attending meetings, supervising clients, getting lunch/coffee for supervisors, or typing personal material were appropriate to their job. The one male who reported that he xeroxed or duplicated indicated this was not appropriate to his job.

Only one of the differences was statistically significant: more males felt that writing reports and letters for work was an appropriate function, and males performed it more often. Other, smaller differences will be noted. For 20 of the 49 activities in Part IV, there was a difference between males and females of more than 10 percentage points. Of these twenty, only six were activities that more females thought were appropriate: waiting for instructions/machine time; instructing/tutoring clients; proofreading/keypunching; restocking (feeding) equipment (animals); xeroxing/duplicating; and securing/guarding. Interestingly, except for "instructing clients" and "duplicating", women do not engage in these activities more frequently than males. This suggests that females more readily view their jobs as clerical in nature--which indeed may be true for this sample.

More males thought that a range of activites was appropriate, including relatively routine tasks (such as collecting, sorting data/things, and answering phones/taking messages) and higher-level activities, such as writing reports and supervising clients.

To highlight some of the more unexpected differences, more males than females who typed for work thought that it was something that they should do as part of their job; and, more males felt that getting lunch/coffee for supervisors was appropriate (although very few males or females did so).

These results together with the data on how many of each sex engaged in the activites, and how frequently, suggest several lines of inquiry. For example, there needs to be additional study of the correlation between performing a task and the task's appropriateness to the job title, with particular attention to women's changing roles. Our data indicates that more females type during a typical day, but are less likely to consider typing appropriate, even where the typing is work-related. Similar results were obtained for answering phones/taking messages and reordering supplies. Women may be asked to do these things--and may do them--even though they were not what they were hired to do. Alternatively, of course, these findings may be interpreted as perceptual--as an increasing sensitivity on the part of females in light of the recent emphasis on women's roles.

In summary, there are few differences between what males and females consider to be appropriate work activities, irrespective of how many people do them, or how frequently. The most striking difference between the sexes, and one that is consistent with all the data presented thus far, is that males indicate that more activities were appropriate to their jobs. This suggests either that males are more likely to be given things to do which match their job descriptions, or that they are more likely than females to perceive whatever they are doing as appropriate. Consider, however, that males also report working in many more locations and interacting with a greater variety of people. Whether these differences are perceptual, correlated with job titles, or result from differential treatment is not yet clear.

Work Environments

In this section, Work Environments, we will examine some of the conditions and situations that characterize students' first co-op jobs, as they reported them. Included are discussions of work space and equipment, amount of responsibility, working hours, and the formality with which students are treated. Unless otherwise noted, the data was obtained from the Questionnaire.

Work Space and Equipment. Students were asked whether they had their own desk, room or station, locker of storage space, typewriter or tools, keys, and telephone.[1] They were also asked to indicate, for each item, whether co-workers with jobs similar to theirs had these things available. Table 8, page 37, summarizes the proportion of males and females responding "yes" to each part of the question.[2]

Looking at the proportions of males and females who reported that they had each item, we find that there were substantially more females who reported having their own typewriter/tools (approximately 12% more), locker/storage space (about 6%), and desk and keys (about 5% more females). More males (almost 10%) said they had their own phones, and own room/work station (approximately 2%). These findings are consistent with the fact that females do more typing, as well as answering phones and taking messages for other people. The telephone and slight room/work station advantage that males report are suggestive of differences in level or type of jobs.

A more interesting comparison is the difference between what males and females report for themselves and for their co-workers. This is illustrated in the "difference" columns on the table. Note that in this

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[1] Student Questionnaire, Question 11.

[2] In this and subsequent presentations of results, figures are based on the actual number of respondents to a question or item.

TABLE 8

Space and Equipment Provided to Co-op Students and Co-workers, as Reported by the Students

(All Figures in Percentages)

SPACE/EQUIPMENT	% Males Reporting "Yes":			% Females Reporting "Yes":		
	They Have Their Own	Co-Workers Have Their Own	Diff.	They Have Their Own	Co-Workers Have Their Own	Diff.
Desk	61.2	61.5	-0.3	66.1	76.9	-10.8
Room/Station	50.0	47.9	+2.1	48.1	54.6	- 6.5
Locker/Storage Space	33.3	37.9	-4.6	39.4	46.3	- 6.9
Typewrite/Tools	39.8	42.6	-2.8	51.8	56.0	- 4.2
Keys (for the room you use)	35.7	43.2	-7.5	41.1	53.8	-12.7
Telephone	46.9	49.5	-2.6	37.3	52.3	-15.0

Note: The difference columns represent, for each sex, the discrepancies between self and co-workers. A minus indicates that fewer co-op students have the specific item than co-workers with similar jobs.

table, the differences are between the proportion of students and co-workers with similar jobs. Positive differences (+) indicate that a greater proportion of co-op students had the item than their co-workers; negative (-) differences mean that more co-workers had the item.

It can be seen from the table that male students report a generally small difference between what they had as compared to co-workers in similar capacities. In fact, slightly more males (+2.1) report having their own room/station than their co-workers did. The largest difference was having keys to rooms they use: 35.7 percent of the males had their own keys as compared with 43.2 percent of their co-workers. Females, on the other hand, reported much larger differences between themselves and co-workers, with co-workers being more likely to have every item on the list. There were particularly large differences in the proportions having their own telephone, keys, and desk.

From these data it is difficult to ascertain whether the differences between the sexes, or the differences between the students of each sex and their co-workers are the results of differential treatment, or variations in the type of jobs--and hence, working conditions--of male and female students. Followup studies, with better matched job titles, should be undertaken in order to rule out the latter hypothesis.

Working Hours. Students were asked about their working hours and about the number of days they work. Excluding overtime, approximately 85 percent of both sexes worked a five day week; and about 80 percent and 88 percent of males and females, respectively, worked seven to eight hours a day. Interestingly, whereas only about 7 percent of the females report being at work nine or more hours a day, twice as many males (about 14%) work long days in a typical week.

In terms of starting the work day, most males and females (approximately 89% of both groups) began between 7:00 and 9:00 A.M.; and 80 percent and 78 percent of males and females, respectively, left work between the hours of 3:00 and 5:00 P.M. There were two males (and no females) who reported that their work day began at or after 11:00 P.M. Approximately equal numbers of students of each sex--eight males and nine females (approximately 8% of each group)--had work shifts that ended between the hours of 10:00 P.M. and 4:00 A.M.

There were differences between males and females in how frequently they worked overtime.[1] Approximately 19 percent of the males and 13 percent of the females indicated that they "often" work overtime; and 53 percent of the males as compared with 37 percent of the females said they "sometimes" or "rarely" work overtime. Thus, while about 70 percent of the male students work overtime, only about half of the females did. When asked if they were compensated with pay or compensatory time for working overtime, slightly more females said yes: approximately 70 percent of the males reported compensation for overtime work as compared to 75 percent of the females.

In summary, although the differences are not substantial, it appears that male co-op students are somewhat more likely to work a longer day, more likely to work overtime, and less likely than females to be compensated--in some manner--for overtime work. Taken together, these results support the belief that overtime work is taken somewhat more for granted for men than for women.

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[1] Student Questionnaire, Question 6.

Amount of Responsibility. On the Questionnaire, students were asked whether they had "less than average", "about average", or "more than average" responsibility when compared to other people doing similar work.[1] Overall, more females felt they had "more than average" responsibility (18.6%; 26.9%), although a larger proportion of females (as compared to males) also thought they had "less than average" responsibility (14.4%; 18.5%). Generally, males are more likely to think they have an average level of responsibility (67.%; 54.6%). When asked how often their work was checked or examined by their supervisor at work[2], 74 percent of the males and 64 percent of the females said "every day" or "once or twice a week." The difference in amount of supervision seems to substantiate females' ratings that they had "more than average" responsibility.

We examined amount of responsibility in terms of curriculum of the respondent--Engineering, Business, Liberal Arts, and Health. (For a more complete description of the specific majors subsumed under these four general headings, see page 19.) Except for Health, the data for males and females was fairly consistent with that of the total groups by sex. A larger proportion of females in the Health curricular area (who tended to work in the health field) as compared with females in the other curricula, were more likely to rate themselves as having "more than average" responsibility. Males in the Health curricular area were less likely than males in other areas to rate themselves as having "more than average" responsibility. The proportions were 10 percent for males and 38 percent for females. A possible explanation may lie in the fact that the health-related field is, traditionally, female-dominated and the non-traditional worker--i.e., the male--may actually be given less responsibility. It should be noted, however, that the comparisons are based on 10 males and 24 females.[3]

Formality of Treatment. We were interested in whether there is any difference in the degree of formality with which male and female students are treated in the work place. To do this, we asked them to indicate how often they were addressed by various names/titles, questioned about school or personal life, included in social activities, and asked to do favors for others. For each behavior, students were asked to indicate whether it occurred "often", "sometimes", "rarely", or "never."[1] Scores were calculated by assigning "never" a weight of 1; "rarely" a 2; "sometimes" a 3; and "often" a 4; and averaging these numbers. Table 9 presents these average scores for males and females, a difference score, and the level of statistical significance (t-test). In looking at the table, the higher the score the more frequently the event occurred.

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[1] Student Questionnaire, Question 13.

[2] Student Questionnaire, Question 9.

[3] See Table 3, page 18.

TABLE 9

Average Frequency with which Males and Females
Reported Each Event Occurring at Work

(1 = never; 2 = rarely; 3 = sometimes; 4 = often)

EVENTS	Male	Female	Difference (M-F)[a]
Called by last name	1.68	1.42	+0.26*
Called by first name	3.88	3.89	-0.01
Called by nickname	1.94	1.89	+0.05Δ
Called by endearing name	1.60	1.69	-0.09
Asked about school	2.92	3.08	-0.16
Asked about personal life	2.64	2.77	-0.13
Included in socializing at work	3.25	3.31	-0.06
Included in socializing after work	2.45	2.42	+0.03
Asked to do co-workers favors	2.81	2.76	+0.05
Asked to do supervisors favors	2.62	2.64	-0.02

[a] ** = significant at .01; * = significant at .05; Δ = significant at .10 level.

As can be seen in the table, although both males and females report being addressed by their first names most often, males are called by their last names significantly more often than females, and moreover, tend to be called by a nickname. These results do not accord with our independent analysis of supervisors' ratings of NU students done prior to 1975.[2] In the NU analysis, males and females were referred to by their last names and titles equally (18% of the references were to Mr. ___ and to Miss/ Ms./Mrs. ___), and there was no sex difference in the proportion of times they were referred to by their first name or nickname. However, similar to our data, almost half the total references to each group were by a first or nickname, and twice as many females as males were referred to by pronoun or as "the student."

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[1] Student Questionnaire, Question 21.

[2] As part of their end-of-year ratings, supervisors were provided space in which to supplement the standard ratings. We examined these open-ended comments and obtained a count of the number of times the co-op student was referred to by last name, first name, pronoun, and as "the" or "this student"; we also counted the statements made using no referent.

The use of last names may not be contradictory. The Questionnaire responses concerned face-to-face address; the NU data referred to written evaluations. The fact that more males report being called by their last name could simply reflect an informal mode of address particularly among men--i.e., use of last name without a title.

Females reported being asked somewhat more than males about both school experiences and their personal life, but the differences were not statistically significant. Both sexes reported, to approximately the same degree, being included in socializing during work hours, as well as after work. Socializing during work is more frequent (between "sometimes" and "often") for both groups than socializing after work. Although the average scores on these events do not differ for males and females, more (i.e., a greater proportion) of female respondents said they were included in social activities during work (41%; 47%) and after work (16%; 21%).

Sex of Supervisor. More than three-quarters (77%) of the male students responding to the Questionnaire, and approximately 50 percent of the females said their immediate supervisor at work was male. As might be expected, the sex of supervisors varied with the curricula of the students. All Engineering students were supervised by males. In the Business and Health areas, students tended to have supervisors of the same sex: i.e., most male students were supervised by males, and most females by females. This probably reflects the fact that students in each of these areas had very different jobs. For example, many female Business majors were in secretarial science but no males were; also, many female Health majors worked as nurses-aides or therapy aides whereas males did not. Given current employment statistics we may expect more females in secretarial and nursing supervisory positions.

Students were asked whether, all other things being equal, they would prefer to be supervised by a male or a female.[1] Approximately 25 percent of the males and 37 percent of the females wrote in responses stating they had no preference. Somewhat more than half the males (54%), and approximately one-third (35%) of the female students indicated that they would prefer a male supervisor. The remaining--21 percent of the males, 28 percent of the females--checked female supervisors as a preference. Although the largest proportion of females (and a larger proportion of females than males) stated they had no preference about the sex of a supervisor, a substantial percentage--especially of males--said they would prefer a male. For both male and female students, female supervisors were least frequently preferred.

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[1] Student Questionnaire, Question 8.

The sex of supervisors, among other supervisory characteristics may affect working relationships which, in turn, may influence job performance and satisfaction. In the following sections we will examine students' performance at work and compare their feelings of competency with ratings made by their supervisors.

Assessment of Work Performance

The purpose of these analyses is to compare how males and females assess their work abilities and to examine how closely their self-assessments match employers' evaluations of their performance. Table 10 page 43, presents information from two sources--the Questionnaire, which provided student self-ratings; and the Evaluation, which yielded ratings from supervisors. The activities that were rated are similar to those listed on the Log.

The first three columns of Table 10 summarize student self-ratings and include the proportion[1] of males and females who indicated that they do (or could) perform each of the 33 activities "very well"; the difference between males and females (where a + indicates more males); and the significance level using the χ^2 statistic.

Table 10 also summarizes supervisors' ratings for 22 of the activities. The supervisors' ratings were divided into two groups based on the sex of the student being rated; Evaluations were obtained for 66

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[1] Student Questionnaire, Question 12. These proportions were based on students responding to each activity (item). Non-respondents were numerous: for any given item, the number ranged from 12 to 38 females, and 9 to 40 males.

TABLE 10

Proportion of Male and Female Students Reporting They Perform Each Activity "Very Well", and Supervisors' Mean Ratings of Students' Performance

ACTIVITY	Percentage of Students Who Perform "Very Well"			Supervisors' Average Rating of Students[a]		
	Males	Females	Diff.[b] (M-F)	Males	Females	Diff.[b] (M-F)
Exposure to Extreme Temperatures	66	26	+40**	▨	▨	▨
Exposure to Hazardous Conditions	64	38	+26**	▨	▨	▨
Repairing Equipment/Machines	48	22	+26**	2.2	2.0	+0.2
Designing Instruments, Techniques	55	28	+27**	2.2	2.3	-0.1
Lifting/Carrying Packages/Supplies	90	66	+24**	2.4	2.3	+0.1
Developing Ideas	94	72	+22**	2.1	2.4	-0.3*
Cleaning Equipment/Animals	73	58	+15△	2.4	2.2	+0.2
Instructing Other Workers	90	79	+11*	2.1	2.3	-0.2
Making Decisions	97	86	+11*	2.2	2.4	-0.2△
Making Phone Calls for Work	93	84	+ 9	2.2	2.5	-0.3*
Restocking Equipment/Feeding Animals	78	70	+ 8	▨	▨	▨
Operating Equipment/Machines	91	85	+ 6	2.3	2.4	-0.1
Operating a Computer	48	43	+ 5	1.8	2.6	-0.8**
Instructing/Tutoring Clients	81	76	+ 5	2.3	2.4	-0.1
Tabulating Data (by hand/calculator)	92	88	+ 4	2.4	2.5	-0.1
Reordering Supplies	92	89	+ 3	▨	▨	▨
Working Alone	98	95	+ 3	▨	▨	▨
Putting Supplies on Shelves	96	94	+ 2	▨	▨	▨
Attending Meetings	92	90	+ 2	▨	▨	▨
Collecting or Sorting Data/Things	96	95	+ 1	2.4	2.6	-0.2*
Reading for Work	95	93	+ 2	▨	▨	▨
Going on Work Errands	98	97	+ 1	▨	▨	▨
Writing Work Reports/Letters	85	85	+ 0	2.2	2.5	-0.3
Analyzing Data	81	81	+ 0	2.4	2.4	-0
Taking Notes	90	91	- 1	2.3	2.6	-0.3*
Answering Phones/Taking Messages	91	92	- 1	2.2	2.6	-0.4**
Receiving Instructions	98	99	- 1	▨	▨	▨
Dealing with Clients, Customers, Patients, etc.	91	92	- 1	2.5	2.5	-0
Working with Others	96	99	- 3	▨	▨	▨
Filing, Copying Numbers, Checking	87	93	- 6	2.3	2.6	-0.3*
Proofreading	77	83	- 6	2.0	2.4	-0.4*
Keypunching	37	44	- 7	1.8	2.4	-0.6
Typing for Work	33	63	-30**	1.8	2.5	-0.7*

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

[a] 1.0 = Below Average; 2.0 = Average; 3.0 = Above Average

[b] ** = significant at .01; * = significant at .05; △ = significant at .10 level.

female students and 56 male students. The supervisor was asked to rate whether the students performed an activity "above average", "average", or "below average" compared to what (s)he would expect of the typical, full-time, regular employee.[1] The ratings were weighted--"below average" by "1"; "average" by "2"; and "above average" by "3"; and averaged for male and female student groups. Thus, the higher the score the better the performance. These male and female average scores, the difference between them, and their significance (t-test) is summarized in the right-hand columns of Table 10.

When one examines the proportions of students indicating they could perform each activity very well, it is readily apparent that males feel more competent--and competent in more things--than do females. First, more than 90 percent of the males reported that they do or could perform 19 of the 33 activities "very well"; in contrast, on only 12 items did 90 percent or more of the females rate themselves as competent.

Examining difference scores for the individual activities, it is very striking that on 24 of the 33 activities more males than females expressed feelings of competence. These 24 activities included some where the difference between the sexes was small, but also items where the difference was statistically significant. More males rated themselves as competent on routine activities such as repairing equipment/machines and cleaning equipment/animals; as well as on many higher-level functions such as making decisions; designing instruments, techniques; and instructing other workers. An overwhelmingly greater proportion of males considered themselves able to tolerate exposure to extreme temperatures and hazardous conditions, as well as able to perform physical activities--lifting/carrying packages/supplies.

Most females, on the other hand, do not tend to rate themselves very highly. "Typing for work" was the only activity that significantly more females than males thought they could perform very well. Of the remaining eight activities for which greater proportions of females indicated feeling competent, most were primarily clerical in nature (such as filing, copying numbers, checking; proofreading; answering phones), passive (receiving instructions), or helping (dealing with clients/customers/patients/students/salespeople).

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[1] Item scores were based only on supervisors who rated the students on that item. These numbers were often quite small, since many supervisors either did not respond, indicated that an activity was "not applicable", or that they had "no basis for knowing." For a given item the number of supervisors rating males ranged from 5 to 56; supervisors rating females ranged from 6 to 65.

The differences in self-assessment are even more intriguing when contrasted with the supervisors' ratings.[1] Supervisor scores are available for 22 activities--in 15 of which greater proportions of males expressed competence. On only three of the 22 activities, however, were males rated by supervisors as being more competent than were females, and none of these differences were statistically significant. Females received higher supervisor ratings on all remaining 19 activities. And the difference was statistically significant for a wide range of functions: developing ideas; operating a computer; making phone calls for work; collecting or sorting data/things; taking notes; answering phones/taking messages; proofreading; and typing for work.

Looking at the absolute magnitude of the ratings, the lowest average score for females was 2.0 (which corresponds exactly to "average") for repairing equipment/machines. The highest scores (a perfect "above average" score would be 3.0) were for collecting or sorting data/things (2.6); taking notes (2.6); filing, copying numbers, checking (2.6); answering phones/taking messages (2.6); and operating a computer (2.6). Except for the last item, it appears that females were rated most highly on clerical tasks, even though their performance on other functions was almost all considerably "above average."

Males, on the other hand, were scored "below average" for such activities as operating a computer (1.8); keypunching (1.8); and typing for work (1.8). Their highest scores (which were not as high as those for the females) were for dealing with clients/customers/salespeople/patients (2.5); cleaning equipment/animals (2.4); tabulating data (2.4); analyzing data (2.4); and lifting/carrying packages/supplies (2.4). Many of these tasks are also of a routine nature.

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[1] There were 209 respondents to the Questionnaire, and 122 Supervisor Evaluations. Thus, comparisons are based on a relatively limited number of all possible ratings. Note, however, that the curricular distribution for respondents to the Questionnaire was fairly similar to that of the students for whom supervisor ratings were completed. This provides some assurance that the students for whom we have Evaluation ratings were representative of the sample.

To determine the influence of the sex of the supervisor on ratings of male and female students, we examined the data for same-sex and opposite-sex differences. We had ratings for 29 females who had male supervisors, 37 female students who had female supervisors, 47 male students supervised by male supervisors, and 9 males who had female supervisors. Both male and female supervisors rated female co-op students high on more activities: female supervisors rated female students higher on 16 of the 22 activities, and the male supervisors felt females performed better than males on 18. Thus, it appears to be the case that, irrespective of the sex of the rater, female students are more likely than males to perform at average or better levels.

There is some indication that the curriculum of the students might be related to their self-assessments. When we divided the students into the four general curricular areas of Engineering, Business, Liberal Arts, and Health, some differences emerged. Whereas more males than females in Business, Liberal Arts, and Health expressed competence on more activities, the figures for Engineering students were reversed: more males assessed their competence higher in nine items, and more females assessed themselves better on 15 activities. (Equal proportions of male and female Engineering students reported that they do or could perform the remaining nine items "very well"). Although these findings are based on a very small sample--5 female and 11 male Engineering students--it suggests further study, particularly as to whether women in non-traditional fields feel more competent, or whether the more competent and/or self-confident women enter non-traditional fields.

These results, taken as a whole, seem to indicate that male co-op students display a substantially higher degree of confidence in their ability to perform various tasks, although this does not translate into higher supervisor ratings of performance. Furthermore, the results seem to imply that females' performance is at a higher level than their confidence or, alternatively, that their performance exceeds the expectations of those rating them.

In an attempt to better understand these data, we examined other ratings of students that were available. As indicated earlier in this report, NU made available supervisor ratings of 99 male and 99 female co-op students from prior years, fairly evenly distributed in each of

TABLE 11

Proportion of Students in the Class of 1977 Who were Rated by Supervisors at the End of Their Co-op Assignment

DIMENSIONS	Percentage Rated	
	M (N=99)	F (N=99)
I. Relations With Others:		
Exceptionally well accepted	36	40
Works well with others	50	51
Gets along satisfactorily	12	9
Has some difficulty working with others	2	0
Works very poorly with others	0	0
Unable to evaluate	0	0
II. Judgment		
Exceptionally mature	18	19
Above average in making decisions	39	40
Usually makes the right decision	38	37
Often uses poor judgment	2	2
Consistently uses bad judgment	0	1
Unable to evaluate	3	1
III. Ability to Learn		
Learns very quickly	54	52
Learns readily	31	38
Average in Learning	14	9
Rather slow to learn	1	0
Very slow to learn	0	1
Unable to evaluate	0	0

DIMENSIONS	Percentage Rated	
	M (N=99)	F (N=99)
IV. Attitude-Application to Work		
Outstanding in enthusiasm	23	23
Very interested and industrious	58	51
Average in diligence and interest	14	24
Somewhat indifferent	4	2
Definitely not interested	1	0
Unable to evaluate	0	0
V. Dependability		
Completely dependable	48	53
Above average in dependability	36	26
Usually dependable	14	16
Sometimes neglectful or careless	1	4
Unreliable	1	1
Unable to evaluate	0	0
VI. Quality of Work		
Excellent	39	42
Very good	43	42
Average	17	15
Below average	1	0
Very poor	0	1
Unable to evaluate	0	0
VII. Overall Rating		
Excellent	41	39
Very good	39	44
Average	19	15
Marginal	0	1
Poor	1	1

eight majors; all supervisors' ratings were for a first co-op experience, and all predated 1975. The standard rating form in use at that time asked the supervisor to rate the student on six dimensions--relations with others, judgment, ability to learn, attitude, dependability--and on overall performance. (In addition, space was provided for comments.)

Table 11 (page 47) summarizes these ratings. As can be seen, males and females were rated very similarly on all dimensions. In terms of relations with others, dependability, and quality of work, females were somewhat more likely to be rated better than males. Although the difference is very slight, males were more often given an "excellent" overall rating--an interesting finding in light of the fact that on four of six dimensions (there was one "tie") females received somewhat more "highest" ratings than males.

The differences in these data are not as one-sidedly in favor of females as those we obtained from the Evaluation. Part of the reason may, of course, relate to the differences in item specificity.

Personal Characteristics and Work Habits

In this section we will examine personal characteristics and work habits of male and female students as perceived by their supervisors. More specifically, we will investigate supervisors' ratings of males' and females' personal qualities, and which of the qualities they consider assets, liabilities, or not relevant to students' jobs. We will also look at these qualities from the students' point of view--how they are referred to at work. Finally, we will present student and supervisor data concerning compliance with work rules and procedures.

Personal Characteristics. On the Evaluation, supervisors were asked to indicate whether the student did or did not possess each of 40 qualities, and to indicate whether each characteristic was an asset, liability, or not relevant to the performance of the student's job. Table 12, page 49, summarizes these results. It presents, to the left, the proportion of male and female students who were judged by supervisors as having the quality, the difference between these proportions, and the χ^2 significance of the difference. Included to the right is the percentage of

TABLE 12

Proportion of Students Rated by Supervisors as Having Each Quality, and Supervisors' Ratings of the Quality

QUALITY	Percentage of Students Having Quality			Percentage of Supervisors Rating Each As		
	Males	Females	Diff.[a]	Asset	Liability	Not Relevant
Aggressive	54	32	+22*	57	22	21
Strong	83	67	+16Δ	48	0	52
Competitive	67	56	+11	56	6	38
Sympathetic	96	91	+ 5	60	3	37
Logical	98	94	+ 4	98	1	1
Assertive	80	76	+ 4	78	6	16
Open to Learning New Things	98	96	+ 2	96	4	0
Self-Confident	86	84	+ 2	90	6	4
Considerate	98	97	+ 1	96	1	3
Open to Criticism	93	92	+ 1	95	3	2
Objective	91	90	+ 1	91	4	5
Talkative	48	48	+ 0	39	23	38
Temperamental	13	13	+ 0	28	57	15
Energetic	89	89	- 0	93	3	4
Reliable/Responsible	96	97	- 1	99	0	1
Willing to do Favors for Co-Workers	96	98	- 2	84	0	16
Verbal	70	72	- 2	71	11	18
Sensitive	82	85	- 3	57	16	27
Willing to do Favors for Supervisor	94	97	- 3	73	3	24
Able to Work Well with Others	95	98	- 3	99	1	0
Sociable	94	98	- 4	74	3	23
Emotional	9	14	- 5	27	48	25
Generous	94	98	- 4	49	3	48
Tactful	80	85	- 5	89	6	5
Productive	95	100	- 5	98	1	1
Shy	11	16	- 5	18	43	39
Intelligent	93	98	- 5	97	0	3
Able to Work Well Alone	87	94	- 7	94	3	3
Gentle	82	88	- 6	53	4	43
Curious	86	92	- 6	86	7	7
Intuitive	78	86	- 8	77	4	19
Ambitious	83	91	- 8	85	4	11
Attractive	87	95	- 8	32	2	66
Neat	86	95	- 9	86	4	10
Patient	82	92	-10	89	5	6
Able to Advance Rapidly	75	86	-11	79	6	15
Creative, Imaginative	67	80	-13	75	5	20
Efficient	82	95	-13*	97	3	0
Fashionable	55	77	-22*	24	2	74
Artistic	26	62	-36**	28	4	68

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

[a] ** = significant at .01; * = significant at .05; Δ = significant at .10 level.

supervisors who felt the quality was an asset, liability, or not relevant.[1]

In examining the qualities themselves, it can be seen that most were perceived as assets: 31 of the 40 attributes were considered an asset by at least half of the supervisors. The qualities which 95 percent or more considered assets were: open to learning new things, considerate, open to criticism, reliable/responsbile, able to work well with others, productive, efficient, logical, and intelligent. Only one item on the list was seen as a liability by more than half (57%) of the supervisors--temperamental--although substantial proportions thought that it was a liability to be shy (43%) or emotional (48%). Several characteristics were perceived by a majority of supervisors as being not relevant to the students' jobs: strong (52%), attractive (66%), fashionable (74%), and artistic (68%).

There were some substantial differences in how male and female supervisors viewed each quality. For example, while 67 percent of the male supervisors felt that it was an asset to be aggressive, only 39 percent of the female supervisors did. Similarly, 64 percent of male supervisors rated competitive an asset, compared to 43 percent of female supervisors. Substantially more female supervisors, on the other hand, thought it was an asset to be generous (42%; 61%), verbal (66%; 80%), willing to do favors for supervisors (68%; 81%), and self-confident (86%; 98%).

Examining the ratings of students presented in Table 12, two general trends are apparent. First, more than three-quarters of students of both sexes were described by supervisors as having almost all the qualities listed. Thirty of the 40 characteristics were attributed to the males, and 32 were attributed to the female students. Second, by inspecting the difference column, it can be seen that a greater proportion of females (than males) were described as having 27 of the 40 characteristics.

Looking at the characteristics attributed to 90 percent or more of the males, there were 14 attributes that describe this group of students: almost all males were sympathetic, logical, open to learning new things, considerate, open to criticism, objective, reliable, willing to do favors for co-workers and supervisors, able to work well with others, sociable, generous, productive, and intelligent. All of these were also attributed to 90 percent or more of the females, as well as seven additional qualities: works well alone, curious, ambitious, attractive, neat, patient, and efficient.

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[1] All percentages are based on the number of supervisors responding to each item. Non-respondents to an item ranged from 0-21.

As was mentioned previously, there were very few qualities infrequently ascribed to either sex. There were only three qualities (and the same three for each sex) used to describe 20 percent or fewer males and females--temperamental, emotional, and shy--the same three qualities that substantial proportions of supervisors consider liabilities.

The qualities which differentiate males and females (those with the largest male-female differences) are not very surprising, in that they are those stereotypically used to describe one or the other sex. More males were rated as aggressive, strong, and competitive, while more females are artistic, fashionable, and efficient. For these qualities, the differences are statistically significant; however, large proportions of supervisors rated three of these qualities--artistic, fashionable, and strong--as being not relevant to students' jobs. Thus, half the qualities in which significant differences were found were ones that are judged to be of relatively little importance.

Most of the other small (non-significant) differences also reflect what has been noted as characteristics usually valued for men and women:[1] more males are logical and objective; more females are emotional, tactful, gentle, intuitive, and neat. Some differences, however, are contrary to expectations. For example, more males were rated as talkative, and more females as ambitious. Also, it should be pointed out that approximately 11 percent more females than males were judged as able to advance rapidly.

To summarize: most of the personal qualities attributed to male and female students by their supervisors reflect differences in characteristics usually used to describe members of each sex. Overall, almost all students--but a slightly higher proportion of females--were rated as having most of the desirable qualities.

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[1] Rosenkrantz, P., et. al. Sex-role stereotypes and self-concepts in college students. Journal of Consulting and Clinical Psychology, 1968, 32, 287-295.

Many (25) of the same characteristics were listed on the Questionnaire, and students were asked to indicate whether supervisors "often", "sometimes", "rarely", or "never" used that quality to describe them. Average scores were calculated for the items based on male and female respondents, ranging from 1 for "often" to 4 for "never."

Comparing student responses to supervisor ratings, in most instances it was found that where a larger proportion of males were rated by supervisors as having a quality, males also reported being referred to by that quality more often. The only exception was to "sympathetic": although supervisors found a greater proportion of males sympathetic, female students more often reported that they were described by supervisors as having a sympathetic quality.

In terms of those qualities that supervisors attributed more often to females, males report being described by many of them more often than did females: males report they are described as having sensitivity, tact, shyness, gentleness, curiosity, intuition, and creativity/imagination. As has been the case with most of the data in this report, it appears that male students are more likely to indicate having (or doing) more things than would be expected in light of the data from other sources.

To ascertain whether there is a difference in personal qualities attributed to male and female students under other conditions, we analyzed open-ended comments used by NU supervisors to describe the 1977 sample. We found relatively few differences. In general, males and females tended to be described in similar terms by their supervisors. Students of both sexes were most frequently said to be productive, good workers (33; 32%); reliable, responsible, or dependable (7%; 11%); cooperative (6%; 6%); diligent (10%; 6%); helpful (5%; 9%); having a good attitude (8%; 5%); mature (6%; 5%); showing improvement (8%; 5%); enthusiastic (8%; 6%); and quick to learn (7%; 10%). The largest difference between male and female students in this analysis was in the proportion described as friendly or congenial--4 percent of the males as compared to 17 percent of the females.

There were eleven adjectives NU supervisors used to describe the 1977 sample that matched items on the Evaluation. The results were fairly consistent. In both analyses, more females were described as energetic, reliable, shy, efficient, intelligent, and able to work with others. Whereas supervisors on the Evaluation form rated more females as productive and able to work well alone, in their open-ended comments these characteristics were more frequently attributed to males. And, whereas more males were rated as being open to learning new things on the Evaluation, there was no difference between male and female proportions in the open-ended data.

Interestingly, in the NU open-ended remarks, one student was described as assertive and another as aggressive; both these students were women. This contradicts traditional usage, and the results of our Evaluation, in which supervisors tended to rate males as assertive and aggressive.

Work Habits. Table 13 presents supervisor ratings of students on eight dimensions relating to work habits and rules. These scores are means, and range between 1.0 and 3.0. A score of 1.0 indicates that all students were rated "below average" as compared to the average worker; a score of 2.0 would indicate an "average" rating; and a score of 3.0 means that supervisors rated students "above average" as compared with the usual worker. Weighted average scores were computed for groups of male and female students. These scores, the difference between males and females, and the significance of the difference (based on t-tests) are summarized in Table 13, on the following page.

In examining the absolute value of the scores, it can be seen that on no dimension were either males or females rated below "average." Overall, males received lower ratings, on the average, than females. The lowest scores for males and females were 2.4 and 2.5, respectively, and the highest scores were 2.6 and 2.7, respectively.

It can be seen from the table that there were two work habits in which statistically significant differences were found, and one where the male-female difference approached significance. These were: following

TABLE 13

Supervisors' Average Rating of Male and Female Students' Work Habits

(1.0 = below average; 2.0 = average; 3.0 = above average)

WORK HABITS/POLICIES	Mean Score for: Male	Mean Score for: Female	Difference[a] (M-F)
Use of telephone	2.4	2.7	-0.3*
Understanding/Carrying Out Instructions	2.5	2.7	-0.2*
Rest Breaks	2.4	2.6	-0.2^Δ
Personal Work	2.5	2.6	-0.1
Attendance	2.6	2.7	-0.1
Doing Necessary Drudge Work	2.5	2.5	-[illegible]
Leaving Work On Time	2.6	2.5	+0.1
Arriving At Work Promptly	2.6	2.5	+0.1

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

[a] ** = significant at .01; * = significant at .05; Δ = significant at .10.

rules for use of telephone, understanding or carrying out instructions, and following rules for rest breaks. In all instances, females were rated better than males. In fact, the only work habits where males were rated better than females were leaving work on time and arriving at work on time; neither difference was substantial. Thus, it appears that while both male and female co-op students are rated by their supervisors as complying with work rules better than the average worker, female students are rated somewhat better than male students.

Interestingly, in their self-assessments, males rate themselves higher. On the Questionnaire students were asked to check how well they comply with company work rules and policies.[1] Approximately 39 percent of the males, compared to 32 percent of the females said they complied "better than the average worker"; 60 percent of the males and 67 percent of the females checked "about the same as the average worker", and 1 percent of each group checked "less well than the average worker." The same pattern emerges: there was a tendency for males to rate themselves better than average, even though supervisors rated females better when it came to adhering to work rules and policies.

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[1] Student Questionnaire, Question 18.

In another question (Student Questionnaire, Question 16), students were asked whether they thought their employer was (or would be) "very tolerant", "tolerant with explanation", or "not very tolerant" when it came to violations of work rules and policies. Most male and female students rated their employers as either "very tolerant" or "tolerant with explanation" on every item except being absent from work regularly. And, although the differences were relatively small, substantially more males than females rated their employers as "not very tolerant" when it came to making or receiving phone calls, where they can eat, and when they can take lunch or other rest breaks. These are the very dimensions on which males received poorer ratings from their supervisors.

Students' Attitudes Towards Co-op

We asked students to indicate how useful they found their co-op work placement in improving several general and specific skills.[1] Table 14 summarizes the average "usefulness" scores for males and females on each of ten items. Weighted mean scores were obtained; a score of 1.0 = not useful, 2.0 = somewhat useful, and 3.0 = very useful. Again, the higher the score the more useful the co-op experience.

TABLE 14

Male and Female Students' Average Rating of the Usefulness of the Cooperative Education Experience

(1.0 = not useful; 2.0 = somewhat useful; 3.0 = very useful)

CO-OP'S USEFULNESS IN:	Mean Score for:		Difference (M-F)
	Males	Females	
Providing general work experience	2.7	2.7	-0
Improving general work skills	2.5	2.6	-0.1
Learning about a specific career	2.5	2.6	-0.1
Improving specific career skills	2.2	2.4	-0.2
Learning about one's strengths/ weaknesses	2.4	2.6	-0.2
Making contacts for future employment	2.3	2.2	+0.1
Learning about the "real" world	2.5	2.4	+0.1
Learning how to work with others	2.6	2.6	-0
Teaching one to accept responsibility	2.5	2.7	-0.2
Applying one's education to work	2.1	2.3	-0.2

Note: A ±0 results from rounding; the sign indicates the direction of the difference between males and females.

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[1] Student Questionnaire, Question 25.

An examination of Table 14 clearly suggests that co-op is seen as quite valuable by all students. The scores ranged between 2.1 and 2.7, indicating that co-op was rated from more than "somewhat useful", to almost "very useful." Both sexes thought co-op was most useful in providing general work experience. Co-op was also rated very highly by both males and females for teaching them how to work with others. For both groups, co-op was relatively least useful in helping them apply one's education to work, and making contacts for future employment.

There were differences for males and females. Looking more closely at these, for eight of the ten items on the list females rated their co-op assignments as more useful than did males. Males gave a more useful rating to making contacts for future employment and learning about the "real" world. The largest difference between males and females was in their feelings about the usefulness of co-op for improving specific career skills: females rated co-op substantially more useful than males on this dimension. Females also felt co-op was considerably more useful than did males for teaching you to accept responsibility, for applying your education to work, and for learning about your strengths and weaknesses. Thus, it appears that although both males and females found their co-op experiences quite useful, females found it more valuable in more different ways.

Students were also asked how much they enjoyed their co-op experience.[1] Most males and females indicated either that they enjoyed it "very much" (63%; 64%) or "somewhat" (27%; 30%). Slightly more males said they enjoyed it "very little" or "not at all" (10%; 6%).

In conclusion, almost all students found their co-op assignment enjoyable--women somewhat more so than men. Both sexes found the experience to be between "somewhat" and "very useful" for a variety of things, particularly for providing general work experience. On the whole, however, females tended to rate co-op as more useful than did males, and in more different ways.

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[1] Student Questionnaire, Question 26.

SUMMARY AND CONCLUSIONS

For 1977-78, the Center for Advanced Study in Education received a research grant from the USOE (Cooperative Education Branch) for a pilot study of differences in the cooperative education (co-op) work experiences of male and female students. The purpose of this investigation was to examine the kinds of things males and females do on their first co-op job, how they perceive their working conditions and responsibilities, and how their performance is viewed by their employers.

Four colleges--Northeastern University, The American University, Cook College of Rutgers University, and LaGuardia Community College of the City University of New York--agreed to participate, and provided names of 951 students, all of whom would be placed in their first field assignment in the Spring 1978. A total of 272 different students, 89 percent of those who were interested, comprised the final sample, completing (or having their supervisors complete) at least one of three instruments designed for this study. The sexes were fairly evenly represented overall, but the male-female ratio differed by curriculum and job placement; moreover, reflecting its size, there was a disproportionate number of students of both sexes from Northeastern University.

Information detailing students' typical workday activities was collected by means of the Student Placement Log (Log), a grid listing persons, places (i.e., locations), and activities on one axis, and time intervals on the other. Students were instructed to complete the Log at work, checking the people with whom they interacted, the places in which they worked, and the activities in which they were engaged.

The Student Questionnaire (Questionnaire) supplemented this data. This 6-page questionnaire was sent to all students from the four colleges who had agreed to participate in the study, whether or not they had returned a Log. The Questionnaire provided information of the following types: a systematic, uniform description of each student's job as (s)he perceived it; students' perceptions of how well they did (or could) perform different work-related activities and adhere to work rules and regulations; and students' views concerning interactions with their co-workers and supervisors. Many of the items that appeared on the Log were covered in a slightly different form on the Questionnaire.

The final instrument was a Supervisor's Evaluation (Evaluation)--a short checklist on which students' immediate supervisors at work were asked to indicate what the student did on the job, and how well compared to the average worker; and what personal characteristics the student possessed and how important each was to job performance. The Evaluation was delivered to supervisors associated with three of the colleges by the students; in the fourth college the blank form was sent directly to the supervisors of the students involved.

The supervisor data was complemented by an analysis of ratings of 198 Northeastern University students who were graduated in 1977. Written records of ratings of students at the end of their co-op assignment permitted us to examine their skills and attributes as described by supervisors.

A comparison of what males and females do on a typical day at work (Log and Questionnaire results) did not reveal many differences. Those that did exist tend to support the general stereotypes: for example, more males "lifted and carried" and "travelled" than did females, and more females "typed." Of note is the finding that a larger proportion of males were in more kinds of places during the day, and tended to interact more often with a greater variety of people. Furthermore, male co-op students were more likely to work a longer day, more likely to work overtime, and less likely than female students to receive compensation for the additional time.

These, and the other differences may relate to the fact that the actual jobs of the male and female students in the sample differed, and in basically traditional directions; hence, fairly traditional differences in activities are to be expected. Irrespective of job title, however, these data suggest that although males and females do basically the same kinds of things on their first co-op job, for males the workday is often longer and more varied.

Most students of both sexes viewed each thing that they did on the job as an appropriate activity--something that workers at their level should be doing. Taking all the data together, however, males are more likely than females to view the activities they perform as appropriate, including activities that they rated personal in nature. Males, to a greater extent than females, are either more likely to perceive whatever they are doing as a valid part of their job or males may be more often given tasks to do that match their job title.

Similarly, comparisons of their work space and equipment may indicate a real or perceived difference between males and females. For example, although there were few differences in what the sexes reported having, female students report that co-workers in similar positions had space and equipment that they did not have. Males, on the other hand, report smaller differences between themselves and co-workers with respect to having their own room/work space, telephone, tools, and so on.

Students report that, in terms of formality, they are treated equally at work. Females are more likely to be asked about their school experiences and personal lives, but both sexes are included in social activities during and after work to approximately the same extent.

Supervisors tended to rate females higher than males when it came to general work habits and compliance with company policies. There was a significant difference favoring females for "understanding/carrying out instructions" and in following rules about use of telephones. Interestingly, male students tended to rate themselves as complying with work rules better than female students, despite the fact that their supervisors did not support this.

Irrespective of their own sex, in most cases supervisors tended to attribute similar personal characteristics to male and female students. The differences in their ratings support stereotypical male/female attributes: more males are rated as "aggressive"; more females are "efficient", "fashionable", and "artistic." Supervisors did not feel that qualities such as the last two were, however, relevant to job performance. The analysis of open-ended comments about the 198 Northeastern students lend additional weight to the conclusion that male and female students tend to be described in similar terms by their supervisors.

Although supervisors' sex was not a variable in the ratings, it was of interest to students. More than half the males and approximately one-third of the female students would prefer a male supervisor.

Among the more interesting comparisons is the students' self-assessments of their abilities in relation to supervisors' ratings. Students were asked whether they thought they did (or could) perform a series of work activities very well. The results indicated that more males than females felt competent in most things. In contrast, when supervisors rated students' performance on most of these same activities, females were usually rated as having done better than the males. On broader dimensions of performance (those included in the form for the 198 students in the class of 1977) male and female students tended to be rated equally well by their supervisors.

There was some indication that students' curriculum choice might be related to their self-assessments. Whereas more males than females in (broadly defined) Business, Liberal Arts, and Health-related programs expressed greater feelings of competence in their ability to perform more tasks, the results for Engineering students were reversed: female Engineering majors rated themselves more competent than their male counterparts. Although based on a limited number of cases, this suggests that women in non-traditional fields have higher levels of self-confidence.

Almost all students found co-op to be enjoyable and "somewhat" or "very useful" for a variety or reasons, particularly for providing "general work experience." There was a greater tendency for females to enjoy co-op and to rate it more useful than male students.

To summarize: there are differences in the experiences, activities, working conditions, and performance of male and female students in their first co-op work assignment. It is difficult to determine whether these reflect differential treatment of males and females or whether they result from the fact that male and female students in the sample had jobs that varied by sex. The interpretation notwithstanding,

- certain activities are more frequently performed by persons of one sex or the other, and most of these activities follow traditional, stereotypical patterns;
- the workday for males is more varied--males are in more types of places during the workday and tend to interact with a greater variety of people;

- males tend to work longer hours and work more overtime (without compensation) than females;
- males tend to perform more activities of a personal nature during working hours, and are more likely to feel that most of what they do during the day is appropriate to their job title;
- there is little, if any, difference in how males and females are treated--in terms of formality or socializing--although female students are rated by supervisors as having better work habits and being in better compliance with employer policies and regulations;
- supervisors tend to rate female students more highly than males in terms of performing a variety of work-related functions; in general, students' self-assessments were not in this direction. This, perhaps, is the most striking outcome.

Males were more likely than females to rate themselves as competent on a variety of performances, despite the fact that supervisors rated females higher on many of the same items. Similarly, male students tend to rate themselves as above average when it comes to compliance with work policies, while female students received higher scores from supervisors on these dimensions. Thus, one of the major differences between males and females seems to relate to self-image: females perform as well as (if not better than) males, although they are less likely to believe that they do. The overwhelming weight of this finding calls into question all the data collected--including reported differences in the activities, persons, and locations that comprise the workday--and affects its interpretation.

An immediate next step is to ascertain if differences are perceptual or real. If the latter, are they based on differential treatment of males and females irrespective of job title, or do they relate more to the fact that males and females tend to have different jobs?

We believe that the findings suggested by our data are interesting and important enough to warrant followup. The questions we attempted to answer were answered with reservation since the study was limited by the composition of the sample--students from four colleges on their first co-op work assignment irrespective of curriculum or job title. In any further study, an attempt should be made to obtain better matched groups of males and females. Although this requires a larger pool of potential subjects, less effort needs to be devoted in any followup to designing instruments and procedures for data collection. Some of the variables that future studies might attend to include the effects of curriculum, type of job, work history, and academic ability on male-female experiences. We intend to examine, in particular, sex differences in work for groups of students whose jobs are traditional and non-traditional for their sex.

If the conclusion that females tend to underrate their performance while males tend to overrate theirs is warranted, there are immediate implications for college cooperative education departments. It is possible that the self-confidence of males translates into somewhat less than maximum performance on the job and, hence, lower supervisor ratings; and, it may be that the relatively low self-confidence of females may hinder their advancement when they enter the world of work on a full-time basis while it does not affect their performance on entry-level co-op jobs. Cooperative education program staff may want to devote more effort toward guiding students to make more accurate assessments of their weaknesses and strengths.

APPENDIX A

AGREEMENT FORMS

CASE letter to students. A1

College letter to students, sample A3

Student Agreement Form A4

The Graduate School and University Center
of the City University of New York

Center for Advanced Study in Education
Graduate Center: 33 West 42 Street, New York, N.Y. 10036

March 27, 1978

Dear Student:

The Center for Advanced Study in Education at the City University of New York is conducting a study of cooperative education at several colleges and universities in the eastern part of the country. This study is funded by the U.S. Office of Education, and has received the support of your institution.

The aim of the study is to investigate the kinds of experiences students have in their first cooperative education assignment. We need your assistance to provide us with information about what you do on the job, who you see, and where you work. We will also ask you for your reactions, and for a rating of satisfaction. Opinions from students like yourself, who are currently involved in Cooperative Education programs, are the best source of information on which to base improvements of cooperative education programs nationally. It is important that we include as many students as we can, so that future directions in cooperative education will be responsive to your ideas and experiences. Your input is vital!

If you participate, exactly what will you be getting into? Good question. First, we will be sending you a "log" in March. We will ask you to fill out the log for one day at work; it will be like a time checklist where you will indicate the details of what you did and who you saw and worked with during each hour of the day. It shouldn't take long to complete, and you may find it interesting to keep track of your typical work day. At the end of your current assignment we will send you a questionnaire which, like the log, you will complete and return directly to us. The questionnaire asks you to summarize your assignment and rate its value.

If you agree to participate we will also ask your supervisor to complete a short questionnaire on which he/she will describe your job duties and how you performed them. This questionnaire will also be mailed back to us directly, and no one at your school or place of employment will have access to them. Finally, if you agree to participate we need your permission to look at your grade point average so that we may compare your responses to those of students most like yourself academically.

We have developed procedures to safeguard your privacy and the confidentiality of your responses. First, all communication will be from us to you and from you to us, bypassing both your academic institution and your employer. Second, your school will not be told whether you are participating or not. Third, we will assign a code number to each student participant so that your name will be protected; each form will include only a code number so that we can tell what sets of answers come from which student, but no one will be able to identify you by name.

Please use the attached form to indicate whether you will participate. Check the appropriate box and return it to us in the enclosed, stamped envelope as soon as possible. For both our institution and yours, your assistance is important. We would very much appreciate your input in this research which has promise for improving the cooperative education experience of future students on a national basis. We thank you for your very serious consideration.

Sincerely yours,

Barbara R. Heller   Linda Gross
Co-Directors

(Draft letter to be typed on college/university stationery over the signature of the Dean/Director of Cooperative Education. Please complete the name of the college or university.)

[Date - February]

Dear Student:

The enclosed letter from the Center for Advanced Study in Education of the City University of New York describes a research study that they will be conducting this [semester/quarter]. [Name of college/university] was invited to participate in this study and, after review of its merits, agreed to participate. In addition to our college, the study will include several other colleges and universities.

To accomplish the aims of the study, the Center for Advanced Study in Education needs the assistance of students in cooperative education programs. They need your help to provide the information that will assist us all to understand the cooperative education experience from your perspective. I urge you to read their letter carefully, consider being involved in the research, and promptly complete and return the "Agreement Form" to them.

Your participation is voluntary and confidential. Whatever your decision, [college] will not be notified of it, and there will be no penalty to you. If you agree to participate, and we would like you to do so, your effort will be minimal. The results will, however, be of significance to future cooperative education interns and will permit programs at this college and others around the country to better reflect the needs, experiences, and concerns of the students. My thanks for your consideration of this proposal.

Sincerely yours,

[Dean/Director]

D

The Graduate School and University Center
of the City University of New York

Center for Advanced Study in Education
Graduate Center: 33 West 42 Street, New York, N.Y. 10036

Cooperative Education Study

Student Agreement Form

Please check the appropriate box, sign, and return this in the envelope provided.

☐ I agree to participate in the study described in the attached letter dated March 27, 1978 under the condition that the information gathered is used for research purposes only, and that all information will be kept confidential. I also understand that I may withdraw my participation at any time without penalty, and am free to inquire about procedures and findings.

☐ I do not agree to participate. (Would you please tell us why?)________________

____

____

____

Date:________________, 1978

____
Signature

____
Please print your name

Please give us the best address at which you can be contacted during your cooperative education assignment.

____
Address

____
City, State, Zip Code

APPENDIX B

INSTRUMENTS

CASE letter to students, re: Log. B1

Sample Log and Instructions. B2

Log Cover Sheet. B3

Log. B4

CASE letter to students, re: Questionnaire. B5

Student Questionnaire. B6

CASE letter to supervisors B12

College letter to supervisors, sample. B13

Supervisor's Evaluation. B14

The Graduate School and University Center
of the City University of New York

Center for Advanced Study in Education
Graduate Center: 33 West 42 Street, New York, N.Y. 10036

Dear Student:

Thank you for helping us study the cooperative education work experience. The Student Placement LOG is the first of the two tasks we are asking you to do. The LOG is to be completed only once, for one day at work. When you finish it, it will be a record of all your activities--where you were, what you did, and who you talked with during a typical day at work.

Pick either Wednesday, April 26, or Thursday, April 27, to be LOG day. We want a fairly typical day, so if you do not work either of those two days, or if you are on a very special assignment those days, select the very next normal day at your co-op job. Before you go to work on LOG day, familiarize yourself with the LOG by reading over the Sample LOG and Instructions.

We would like you to complete the LOG at work IF YOUR EMPLOYER DOES NOT OBJECT AND IF THE NATURE OF YOUR WORK ALLOWS IT! If you can fill it out at work, we suggest doing it at the end of every hour. Filling it out at the end of each hour time period increases the chances that you will note everything you did.

If you cannot fill out the LOG at work, please try to complete it immediately after work, preferably on the same day so that you can recall as many of the details as possible.

When the LOG is completed, answer the questions on the Cover Sheet and mail the completed LOG and Cover Sheet back to us in the enclosed, stamped envelope.

Do not mail the pen or the instructions back!

Don't let the size of the LOG turn you off! Filling it out should take only a few minutes and may even be fun. At the very least, it should provide you with an overview of your co-op assignment.

Thanks for your cooperation. REMEMBER THAT YOUR RESPONSES ARE CONFIDENTIAL.

Sincerely,

Barbara R. Heller Linda Gross

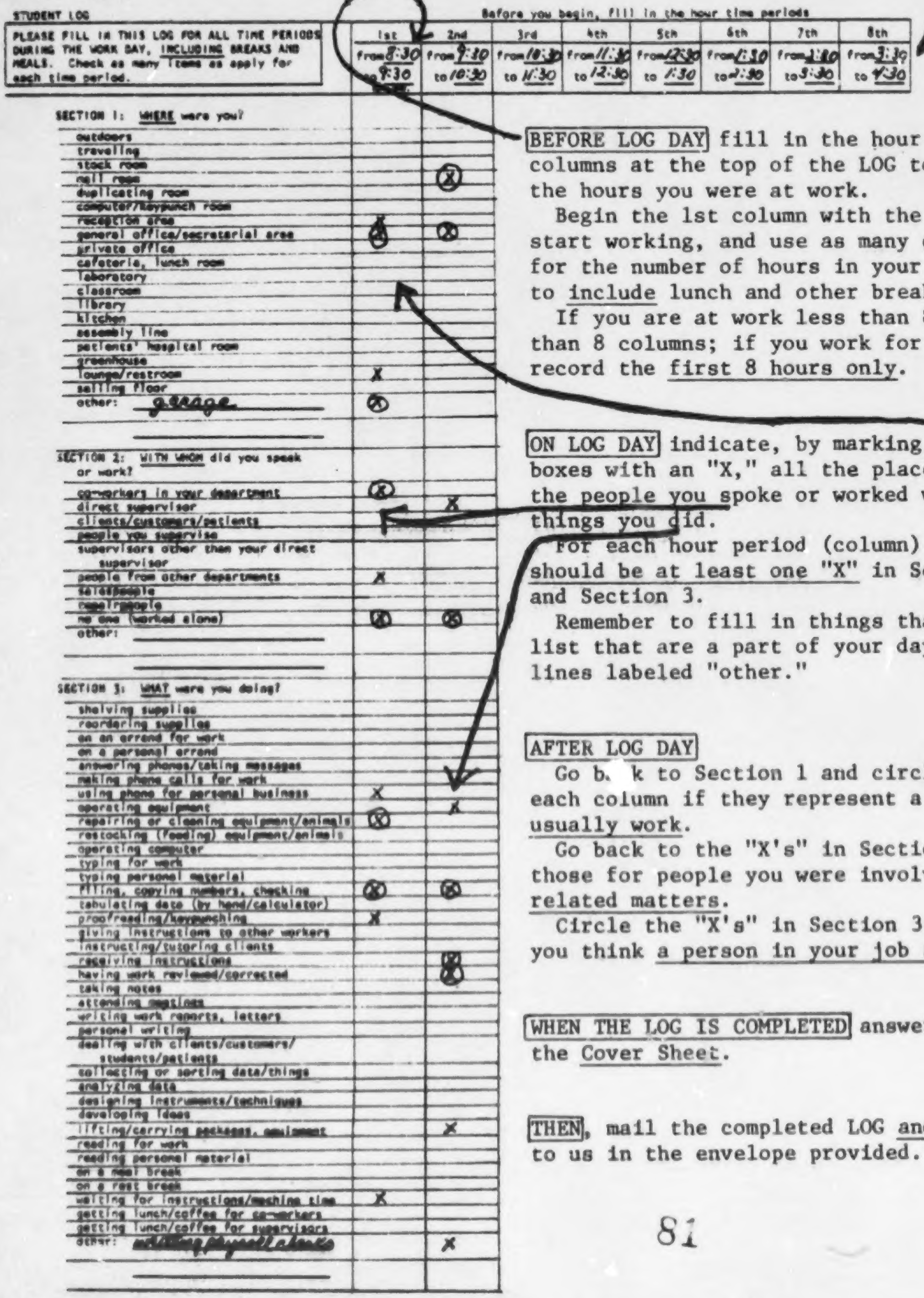
Barbara R. Heller Linda Gross
Co-Directors

SAMPLE LOG AND INSTRUCTIONS

BEFORE LOG DAY PLEASE READ THESE INSTRUCTIONS AND LOOK OVER THE FORM CAREFULLY

We are asking you to describe your day at work, by using an "X" to indicate where you were, what you were doing, and with whom you spoke each hour. The columns to the right are time periods. EACH COLUMN REPRESENTS ONE HOUR.

To the left is a list of things grouped into three sections. Section 1 is Where you were. Section 2 is With whom you spoke or worked, and Section 3 is What you did. THERE SHOULD BE AT LEAST ONE "X" IN EACH SECTION FOR EACH HOUR. The lines labeled "other" on the list are for places, people, or activities that we did not include which are unique to your placement situation.



STUDENT LOG

PLEASE FILL IN THIS LOG FOR ALL TIME PERIODS DURING THE WORK DAY, INCLUDING BREAKS AND MEALS. Check as many items as apply for each time period.

Before you begin, fill in the hour time periods

	1st	2nd	3rd	4th	5th	6th	7th	8th
	from 8:30 to 9:30	from 9:30 to 10:30	from 10:30 to 11:30	from 11:30 to 12:30	from 12:30 to 1:30	from 1:30 to 2:30	from 2:30 to 3:30	from 3:30 to 4:30
SECTION 1: WHERE were you?								
outdoors								
travelling								
stock room								
mail room		⊗						
duplicating room								
computer/keypunch room								
reception area								
general office/secretarial area	⊗	⊗						
private office								
cafeteria, lunch room								
laboratory								
classroom								
library								
kitchen								
assembly line								
patients' hospital room								
greenhouse								
lounge/restroom	X							
selling floor								
other: garage	⊗							
SECTION 2: WITH WHOM did you speak or work?								
co-workers in your department	⊗							
direct supervisor		X						
clients/customers/patients								
people you supervise								
supervisors other than your direct supervisor								
people from other departments	X							
salespeople								
repairpeople								
no one (worked alone)	⊗	⊗						
other:								
SECTION 3: WHAT were you doing?								
shelving supplies								
reordering supplies								
on an errand for work								
on a personal errand								
answering phones/taking messages								
making phone calls for work								
using phone for personal business	X							
operating equipment		X						
repairing or cleaning equipment/animals	⊗							
restocking (feeding) equipment/animals								
operating computer								
typing for work								
typing personal material								
filing, copying numbers, checking	⊗	⊗						
tabulating data (by hand/calculator)								
proofreading/keypunching	X							
giving instructions to other workers								
instructing/tutoring clients								
receiving instructions		⊗						
having work reviewed/corrected		⊗						
taking notes								
attending meetings								
writing work reports, letters								
personal writing								
dealing with clients/customers/students/patients								
collecting or sorting data/things								
analyzing data								
designing instruments/techniques								
developing ideas								
lifting/carrying packages, equipment		X						
reading for work								
reading personal material								
on a meal break								
on a rest break								
waiting for instructions/machine time	X							
getting lunch/coffee for co-workers								
getting lunch/coffee for supervisors								
other: [illegible] payroll checks		X						

BEFORE LOG DAY fill in the hour periods in the 8 columns at the top of the LOG to correspond with the hours you were at work.

Begin the 1st column with the hour at which you start working, and use as many columns as needed for the number of hours in your work day. Be sure to include lunch and other breaks.

If you are at work less than 8 hours, use less than 8 columns; if you work for more than 8 hours, record the first 8 hours only.

ON LOG DAY indicate, by marking the appropriate boxes with an "X," all the places you were; all the people you spoke or worked with; and all the things you did.

For each hour period (column) in your day there should be at least one "X" in Section 1, Section 2, and Section 3.

Remember to fill in things that are not on the list that are a part of your day at work. Use the lines labeled "other."

AFTER LOG DAY

Go back to Section 1 and circle your "X's" in each column if they represent a place in which you usually work.

Go back to the "X's" in Section 2 and circle those for people you were involved with about work-related matters.

Circle the "X's" in Section 3 for activities that you think a person in your job should do.

WHEN THE LOG IS COMPLETED answer the questions on the Cover Sheet.

THEN, mail the completed LOG and Cover Sheet back to us in the envelope provided.

D

CENTER FOR ADVANCED STUDY IN EDUCATION
The Graduate School and University Center
of the City University of New York
33 West 42nd Street
New York, NY 10036

COOPERATIVE EDUCATION PLACEMENT LOG

Cover Sheet

Before you mail this Log back to us, please complete the following information.

1. Sex: ☐ Male ☐ Female

2. Indicate the date this Log describes:

☐ Wednesday, April 26, 1978

☐ Thursday, April 27, 1978

☐ Some other date; if so,
(a) What date?______________________________
(b) Why were the suggested dates not possible?______________________________

3. Overall, how typical was this day at work?

☐ Not at all typical ☐ Somewhat typical ☐ Very typical

4. On the day for which the Log was filled out,
(a) What time did you arrive at work?____________________ A.M./P.M. (Circle one)
(b) What time did you leave work?____________________ A.M./P.M. (Circle one)

5. When did you fill out the Log?

☐ Completely filled out during work on Log day (skip question 6).

☐ Partially completed during work on Log day, partially filled out later (answer question 6).

☐ Completely filled out later (answer question 6).

6. If you were unable to complete the form at work, explain why:______________________________
____

7. Check to indicate if you want a copy of your Log: ☐ Yes ☐ No

8. If you have any comments or suggestions to make about the Log or the research, please use the back of this page.

STUDENT LOG

PLEASE FILL IN THIS LOG FOR ALL TIME PERIODS DURING THE WORK DAY, INCLUDING BREAKS AND MEALS. Check as many items as apply for each time period.

Before you begin, fill in the hour time periods

	1st	2nd	3rd	4th	5th	6th	7th	8th
	from ___ to ___	from ___ to ___	from ___ to ___	from ___ to ___	from ___ to ___	from ___ to ___	from ___ to ___	from ___ to ___
SECTION 1: WHERE were you?								
outdoors								
traveling								
stock room								
mail room								
duplicating room								
computer/keypunch room								
reception area								
general office/secretarial area								
private office								
cafeteria, lunch room								
laboratory								
classroom								
library								
kitchen								
assembly line								
patients' hospital room								
greenhouse								
lounge/restroom								
selling floor								
other: ___								
___								
SECTION 2: WITH WHOM did you speak or work?								
co-workers in your department								
direct supervisor								
clients/customers/patients								
people you supervise								
supervisors other than your direct supervisor								
people from other departments								
salespeople								
repairpeople								
no one (worked alone)								
other: ___								
___								
SECTION 3: WHAT were you doing?								
shelving supplies								
reordering supplies								
on an errand for work								
on a personal errand								
answering phones/taking messages								
making phone calls for work								
using phone for personal business								
operating equipment								
repairing or cleaning equipment/animals								
restocking (feeding) equipment/animals								
operating computer								
typing for work								
typing personal material								
filing, copying numbers, checking								
tabulating data (by hand/calculator)								
proofreading/keypunching								
giving instructions to other workers								
instructing/tutoring clients								
receiving instructions								
having work reviewed/corrected								
taking notes								
attending meetings								
writing work reports, letters								
personal writing								
dealing with clients/customers/students/patients								
collecting or sorting data/things								
analyzing data								
designing instruments/techniques								
developing ideas								
lifting/carrying packages, equipment								
reading for work								
reading personal material								
on a meal break								
on a rest break								
waiting for instructions/machine time								
getting lunch/coffee for co-workers								
getting lunch/coffee for supervisors								
other: ___								
___								

AT THE END OF THE DAY, GO BACK AND LOOK OVER ALL YOUR CHECKS: Then,

Circle checks in Section 1 that are places in which you usually work.

Circle checks in Section 2 when you spoke with people about work.

Circle checks in Section 3 that are activities that you think a person in your job should do.

The Graduate School and University Center
of the City University of New York

Center for Advanced Study in Education
Graduate Center: 33 West 42 Street, New York, N.Y. 10036

Dear Student:

These are the last requests we will make for our study of the cooperative education work experience: we are enclosing a questionnaire for you to complete, and another questionnaire we want you to give to your direct supervisor at work.

The Student Questionnaire should be filled out as soon as you can do it, and returned directly to us in the self-addressed envelope. Again, we assure you of the confidentiality of your responses.

We have also enclosed a set of materials labelled, FOR YOUR WORK SUPERVISOR. These materials, which you are free to look through, consist of two letters explaining the study, a return envelope, and a questionnaire that asks your supervisor to rate you on job performance and personal qualities. Please give this set of materials to the person at work to whom you report for most of your instructions or work review. This supervisor will mail the questionnaire directly back to us. No one at your college will see the supervisor's responses, and neither you nor your employer will be identified. (Like all other forms we have used, these contain code numbers to enable us to match all data for an individual student without working with names.)

Please complete the Student Questionnaire as quickly as possible. Also, if you have not as yet completed and returned the Student Log, please do so. And, remember to deliver the "FOR YOUR WORK SUPERVISOR" materials as soon as you can.

Since this is the last time we will be asking you to comply with our requests, we would like to thank you again for your valuable help. We are very aware that we couldn't have done the project without you! As you know, the results of the study should be available after October 1978, and we invite you to request a copy of the report if you haven't done so already.

Sincerely,

Barbara R. Heller Linda Gross

Barbara R. Heller Linda Gross
Co-Directors

CENTER FOR ADVANCED STUDY IN EDUCATION
Graduate School and University Center
City University of New York

Cooperative Education Project

STUDENT QUESTIONNAIRE

1. Indicate your:

College major: ____________________

College minor: ____________________

Sex: ☐ Male ☐ Female

Class Standing: ☐ Freshman ☐ Middler ☐ Senior
☐ Sophomore ☐ Junior ☐ Graduate

2. Have you ever had a job before this co-op education work assignment?

☐ No ☐ Yes; if yes, indicate what kind(s) of job(s) you have had: ____________________

____

Indicate how many months you worked at the job you had longest: ________ months.

THE FOLLOWING QUESTIONS ARE ABOUT YOUR CURRENT CO-OP WORK ASSIGNMENT

3. Describe the type of place/organization you work in (e.g., school, hospital, agricultural station, engineering company, market research company): ____________________

____

4. What is the title of your co-op position (job title)? ____________________

5. Indicate your usual daily work hours in a typical week. (Do *not* include overtime.) For example, "TIME START" on Monday might be indicated as 9:30 a.m.; "TIME QUIT" might read 5:50 p.m.

	MON	TUE	WED	THUR	FRI	SAT	SUN
TIME START							
TIME QUIT							

6. How often do you work overtime? ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

About how many hours of overtime do you work a week? ________ hours a week.

In general, are you compensated for overtime with pay *or* time off? ☐ No ☐ Yes

7. At work, do you take regularly scheduled breaks each day for:

Lunch or other meal(s)? ☐ No ☐ Yes

Coffee or other rest breaks? ☐ No ☐ Yes

8. Is your *direct* supervisor: ☐ Male ☐ Female

All other things equal, would you prefer to be supervised by a: ☐ Male ☐ Female

9. In general, how often is your work checked or examined by your work supervisor(s)?

☐ every day ☐ once or twice a week ☐ once or twice a month

☐ other; please explain: ____________________

10. For each of the possible settings listed below, check the column that describes *how much time on your job* you spend in each setting.

WORK SETTINGS	ALMOST ALL MY TIME	MOST OF MY TIME	SOME OF MY TIME	NONE OF MY TIME
outdoors				
in travel (as part of work)				
stockroom				
mail room				
duplicating/printing room				
computer/keypunch room				
reception area				
general office/secretarial area				
private office				
cafeteria, lunch room				
laboratory				
classroom				
library				
kitchen				
assembly line				
patients' hospital room				
greenhouse				
selling floor				
other; indicate:__________				

11. Whether you work on a farm, in a factory, office, hospital, or some other place, check whether *you* and *other workers like you* have each of the items on the list below.

	Do *you* have *your* own...?		Do *coworkers with jobs similar to yours* have *their own*...?	
	YES	NO	YES	NO
Desk				
Room/station				
Locker or storage space				
Typewriter/tools				
Keys (for rooms you use)				
Telephone				

12. The list below includes activities or situations workers engage in in the course of their jobs. For each item on the list:

First check to indicate how *often you* perform that activity, and
Then check to indicate how *well you* perform (or *could* perform) each activity.

ACTIVITIES/SITUATIONS	CHECK ONE: I perform the activity...			CHECK ONE: I *do* (or *could*) perform the activity...	
	Almost Every Day	Occasionally	Never	Very Well	Not Very Well
putting supplies on shelves					
reordering supplies					
going on work errands					
going on personal errands				XXXXXXXXX	XXXXXXXX
answering phones/taking messages					
making phone calls for work					
using phone for personal business				XXXXXXXXX	XXXXXXXX
operating equipment/machines					
repairing equipment/machines					
cleaning equipment/animals					
restocking equipment/feeding animals					
operating a computer					
typing for work					
typing personal material				XXXXXXXXX	XXXXXXXX
filing, copying numbers, checking					
tabulating data (by hand/calculator)					
proofreading					
instructing other workers					
receiving instructions					
having your work reviewed, corrected				XXXXXXXXX	XXXXXXXX
taking notes					
attending meetings					
writing work reports, letters					
personal writing				XXXXXXXXX	XXXXXXXX
dealing with clients, customers, patients, students, salespeople					
collecting or sorting data/things					
analyzing data					
lifting/carrying packages/supplies					
reading for work					
reading personal material				XXXXXXXXX	XXXXXXXX
waiting for instructions, etc.				XXXXXXXXX	XXXXXXXX
instructing, tutoring clients					
designing instruments, techniques					
keypunching					
exposure to extreme temperatures					
exposure to hazardous conditions					
developing ideas					
getting coffee/lunch for coworkers				XXXXXXXXX	XXXXXXXX
getting coffee/lunch for supervisors				XXXXXXXXX	XXXXXXXX
making decisions					
socializing with coworkers at work				XXXXXXXXX	XXXXXXXX
socializing with supervisors at work				XXXXXXXXX	XXXXXXXX
working alone					
working with others					

13. In your opinion, compared to other people doing work similar to what you do, how much authority and responsibility do you have?

☐ Less than average ☐ About average ☐ More than average

14. Check which of the following you are *required* or *preferred* to wear at work.

☐ Jacket
☐ Suit
☐ Dress
☐ Pants/slacks
☐ Tie
☐ Smock
☐ Skirt
☐ Hat/hairnet
☐ Uniform
☐ Special Shoes
☐ Other; describe:____________________________
☐ Check here if no specific clothing is required.

15. Are there any items of clothing you *cannot* or *should not* wear to work (e.g., jeans, slacks, T-shirts, etc.)?

☐ No ☐ Yes; if yes, what?____

THE FOLLOWING QUESTIONS ARE ABOUT WORK RULES AND POLICIES

16. Whether or not you have a basis for knowing, how tolerant do you *think* your employer would be about:

	Very Tolerant	Tolerant With Explanation	Not Very Tolerant
Your coming to work late regularly			
Your leaving work early regularly			
Your making personal phone calls			
Your receiving personal phone calls			
Your being absent from work regularly			
Where you can smoke			
Where you can eat			
When you can go to lunch			
When you can take a break			
Your doing personal things at work			

17. How late could you be in arriving at work, or how much earlier could you leave work before the end of the "day" *without having to explain why*?

☐ 5 minutes or less
☐ about 10 minutes
☐ about 15-20 minutes
☐ more than 20 minutes
☐ other; explain:____________________
____

18. If there are company or work rules and policies about what workers should do, how well do *you* comply?

☐ Better than the average worker ☐ About the same as the average worker ☐ Less well than the average worker

19. If you do not follow one of the rules, regulations, or policies, indicate what might happen:

☐ Your supervisor would mention it to you
☐ No mention would be made if it does not happen often
☐ No mention would be made of it at all
☐ You might be fired
☐ Other; please describe what:____

20. If *you* were not to comply with company rules and regulations, compared to the average worker, do you think *you* would get into:

☐ More trouble ☐ About the same amount of trouble ☐ Less trouble

THE FOLLOWING TWO QUESTIONS ARE ABOUT INTERPERSONAL RELATIONS AT WORK

21. At work, check how often you are:

	Often	Sometimes	Rarely	Never
called by your last name				
called by your first name				
called by a nickname				
called by an endearing name				
asked about school experiences				
asked about your personal life				
included in socializing during work hours				
included in socializing after work				
asked to do coworkers a favor				
asked to do supervisors a favor				

22. At work, check how often people in positions higher or more responsible than yours (supervisors) describe or refer to you as having each of the following characteristics:

	Often	Sometimes	Rarely	Never
Energy				
Efficiency				
Intelligence				
Ambition				
Openness				
Artistic ability				
Attractiveness (your looks)				
Curiosity				
Competitiveness				
Sensitivity				
Shyness				
Logic				
Intuition				
Neatness				
Talkativeness				
Tact				
Gentleness				
Objectivity				
Self-Confidence				
Fashion sense (your clothes)				
Strength				
Creativity, imagination				
Emotional reactions				
Physical characteristics				
Excitability				
Sympathetic quality				
Reliability				
Aggressiveness				
Thoughtfulness				

THE LAST FOUR QUESTIONS ASK ABOUT THE EFFECTS OF YOUR CO-OP ASSIGNMENT

23. *Before* this co-op placement, what career or occupation did you think you would enter after finishing all schooling? ______________________________

____

24. Did this co-op assignment help change your future career or occupational plans?

☐ No ☐ Yes; if yes, what are you *now* considering? ______________________

____

25. Rate how *useful* you found the co-op placement for each of the following:

	Very Useful	Somewhat Useful	Not Useful
Providing general work experience			
Improving general work skills			
Learning about a specific career			
Improving specific career skills			
Learning about your strengths and weaknesses			
Making contacts for future employment			
Learning about the "real" world			
Learning how to work with others			
Teaching you to accept responsibility			
Applying your education to work			

26. How much did you enjoy this co-op assignment?

☐ Very much ☐ Somewhat ☐ Very little ☐ Not at all

Use the rest of this space for any comments you want to make about your co-op assignment, about cooperative education in general, and/or about this research project.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE
INSERT IT IN THE STAMPED ENVELOPE AND
RETURN IT TO US AS SOON AS POSSIBLE

1977-78

The Graduate School and University Center
of the City University of New York

Center for Advanced Study in Education
Graduate Center: 33 West 42 Street, New York, N.Y. 10036

March 24, 1978

Dear Supervisor:

We would like you to help us in our study of the Cooperative Education experience by completing the enclosed SUPERVISOR'S EVALUATION about ______________________________ (hereafter, the student), who has volunteered to be part of the study. To supplement the information we gathered from other sources, we need to know what this student did (does) on the job, and your perceptions about his/her strengths and weaknesses.

This is a one-time only request; you will not be asked for more information at a later date. Your responses will be kept strictly confidential--used for research purposes only. Neither you as supervisor, the organization for which you work, nor the student will be identified. Notice that no names are asked for on the forms; the code number enables us to match all data for an individual students without identifying the sources.

Please answer all questions. If some items are unusual for your organization, it is because the form was designed to be applicable to supervisors in all types of work environments. When you have completed the SUPERVISOR'S EVALUATION, please return it directly to us in the self-addressed stamped envelope.

The participants in this study feel it is an important endeavor. We thank you very much for your time and cooperation, and invite you to request a copy of the study findings which will be available for distribution late this year. If you have questions, please call us collect.

Sincerely yours,

Barbara R Heller Linda Gross

Barbara R. Heller Linda Gross
Co-Directors

(Draft of letter typed on college/university stationary over the signature of the Dean/Director of Cooperative Education.)

Dear Supervisor:

The enclosed questionnaire from the Center for Advanced Study in Education, Graduate School and University Center of the City University of New York is part of a research study they are conducting under the aegis of the U.S. Office of Education. Several colleges in the northeastern part of the country are cooperating with them in their attempt to improve understanding of the cooperative education experience.

As part of their data collection, they are asking you to supply some information about the on-the-job performance of students who have volunteered for the study. This is a one-time-only request of you; they will not ask for more information about the co-op student.

Of course, your decision to participate is completely voluntary, although we urge you to consider their request. We at ______________ ______________________ feel that the results of the research will be of significance to cooperative education nationally, and will premit our program to better reflect the needs and concerns of students and employers.

If you do agree to participate, complete the SUPERVISOR'S EVALUATION and return the form directly to the Center for Advanced Study in Education. In either instance, your responses will be confidential--neither you , your organization, nor the student will be identified. Since we will not know of your decision to participate, nor have access to your responses, the information they are requesting may duplicate some of what we ask you to do as a regular part of student assessment. Please excuse the repetition.

Thank you for your consideration.

CENTER FOR ADVANCED STUDY IN EDUCATION
Graduate School and University Center
City University of New York

COOPERATIVE EDUCATION PROJECT: SUPERVISOR'S EVALUATION

Below is a list of activities or tasks that the co-op student may have performed while working under your supervision, as well as actions related to organizational policy. Please rate the performance of the student named in the letter on each task. Ratings should be based on what you expect of the average full-time, regular employee with the same job title as the co-op student.

TASKS, ACTIVITIES:	Above Average	Average	Below Average	Not Applicable, or no basis for knowing
Answer phones; taking messages				
Making phone calls for work				
Operating equipment (or machines)				
Repairing equipment (or machines)				
Cleaning equipment; maintaining it				
Operating a computer				
Typing				
Taking dictation; transcribing it				
Filing; copying numbers; checking				
Tabulating data by hand or calculator				
Proofreading				
Instructing other workers				
Understanding, or carrying out instructions				
Taking notes; keeping records				
Writing reports, letters				
Dealing with clients (customers, salespeople, patients)				
Collecting or sorting data (or things)				
Analyzing data				
Instructing or tutoring clients				
Lifting, carrying				
Designing instruments, techniques				
Keypunching				
Developing ideas				
Making decisions				
Doing necessary drudge work				
Arriving at work on time				
Leaving work on time				
Maintaining good attendance				
Following rules for use of telephone				
Following rules for doing personal work during working hours				
Following rules about when (and where) to take meal or rest breaks				

Please indicate the student's job title, and a description of his/her major responsibilities: ____________________

____

Describe the business or organization for which the student works (e.g., hospital, factory, bank...) ____________________

Indicate whether the business or organization is:

☐ Federal Governmental agency
☐ State Governmental agency
☐ City Governmental agency
☐ Non-profit, non-Governmental
☐ Profit-making
☐ Other: ________

(over)

There are personal characteristics that may or may not relate to how well people perform their job. Please indicate (by checking "yes" or "no") whether, in your opinion, the student has each of the following characteristics or qualities. Then, we would also like your opinion as to whether each characteristic on the list is an asset or liability for a regular, full-time employee in the same job title as the co-op student.

PERSONAL QUALITIES:	Check one for each: Is the student..?		Check one for each: For performing the job, the quality is..?		
	Yes	No	an asset	a liability	Not relevant
Productive					
Reliable, responsible					
Considerate					
Attractive					
Talkative					
Logical					
Shy					
Self-confident					
Emotional					
Ambitious					
Competitive					
Verbal					
Gentle					
Neat					
Aggressive					
Energetic					
Efficient					
Intelligent					
Artistic					
Curious					
Sensitive					
Intuitive					
Tactful					
Patient					
Objective					
Sociable					
Fashionable					
Strong					
Creative; imaginative					
Sympathetic					
Temperamental					
Open to criticism					
Open to learning new things					
Able to advance rapidly					
Able to work well alone					
Able to work well with others					
Willing to do favors for co-workers					
Willing to do favors for supervisors					
Generous					
Assertive					

The remaining questions are about your organization and responsibilities--data we need to put into perspective the information we have collected about the student.

How many employees are in the immediate unit/department/division in which the student is employed? ________________ (total number of employees.)

Please indicate: your job title:___________________________________

your sex: ☐ Male ☐ Female

the number of people you supervise:_______________